SOAP and SANITARY CHEMICALS

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In this issue...

Dishwashing detergents —a study of formulations

* * *

Shampoos discussed as to types and trend of demand

* * *

Fly control problems in 1951 outlined by Bishopp

* * *

Sanitary supply markets surveyed in Chicago area

* * *

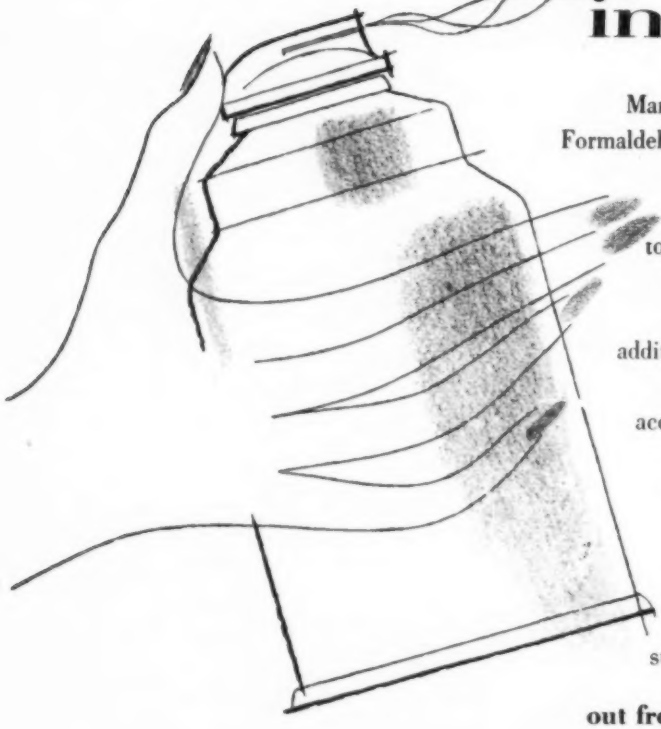
Cover photo . . . New Breck shampoo package, a ten-ounce diamond-point plastic bottle. A modern idea in shampoo packaging, marketed by John H. Breck, Inc. of Springfield, Mass.

1-5

DECEMBER 1950

D&O AEROSOL FRAGRANCES
PUT YOUR PRODUCT

out front
on display
in demand



Manufacturers of Room Deodorants, Insecticides, Formaldehyde Sprays, Detergents, Liquid Soaps, Polishes, Waxes and Cosmetic Products are all agreed they face keener, tougher competition in the days immediately ahead. These manufacturers also acknowledge the need for additional promotional and merchandising aids to make their products more acceptable, more saleable to the consumer.

Recognizing this need, the D&O Laboratories have developed a comprehensive series of tested Aerosol fragrances that are bound to add forceful, persuasive, compelling subtleties that will put your product...

out front, on display, in demand.

D&O ESTABLISHED 1798

DODGE & OLCOTT, INC.
180 Varick Street • New York 14, N. Y.

ATLANTA • BOSTON • CHICAGO • CINCINNATI • DALLAS • LOS ANGELES • PHILADELPHIA • ST. LOUIS • SAN FRANCISCO
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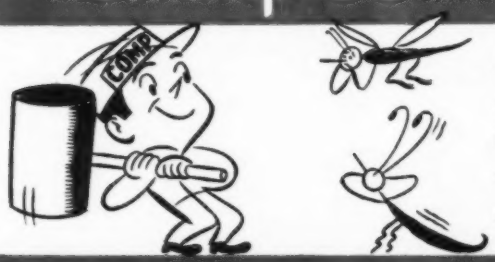
Nothing COMPARES with COMP

As a **CLEANSER** and **SANITIZER, COMP** is a one-operation product. **COMP** loosens the most persistent dirt, holds it in free suspension so that it can be quickly, easily rinsed away! At the **SAME TIME, COMP** kills many germs while cleaning, sanitizing every surface it contacts.

Nothing COMPARES with COMP



As a combined **DISINFECTANT** and **DEODORANT.** Unpleasant odors are often due to bacteria present in decomposing matter. **COMP** kills all vegetative forms of pathogenic bacteria and stops odors at their source. **COMP** doesn't cover up or disguise odors; it helps to prevent them.

Nothing COMPARES with COMP

for **SALES** and **PROFIT.** Once you demonstrate **COMP,** you have a demand item you can count on. It is economical to use. It has so many fields where it can be used—hospitals, schools, food processing plants, restaurants, industrial plants, public buildings, sanitariums, bars, barber and beauty shops, and countless other places. The purchasing agent favors **COMP** because it does the job at reasonable cost, the ultimate consumer likes it because it saves time and trouble.

IF YOU DON'T KNOW ABOUT COMP, *don't wait, write today for a free sample and price list. Remember that in every respect . . .* ***NOTHING COMPARES WITH COMP!***

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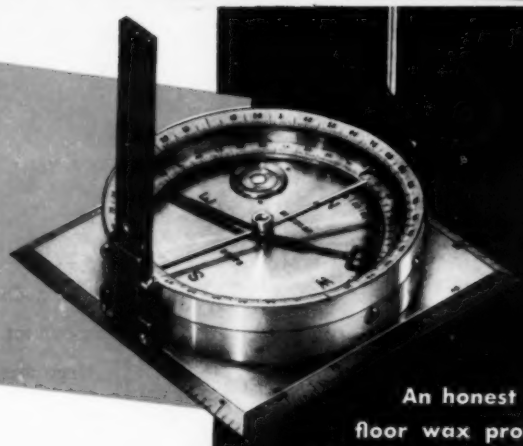
Manufacturers of a complete line of Sanitary Chemicals • 702-710 S. Wolfe Street, Baltimore 31, Maryland

A GUIDE

TO WAX PRODUCTS PURCHASING FOR PRIVATE BRAND RESALE



An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

SELF POLISHING WAXES

Candy's Supreme—Candy's Supreme Special AS

Candy's DeLuxe—Bright Beauty

Four floor waxes that *are* all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt.... Brings neglected floors "back to normal." The *right* cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits *repeated repolishing* with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Drv-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver *without* abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove... also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really *cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the *quality* of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

● **ALL AVAILABLE FOR PRIVATE BRAND ONLY**
We do not compete with our jobbers for consumer sales.
We sell only to distributors, except for experimental accounts in Chicago essential to research.

Wax Specialists for over 55 years

Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

SOAP and SANITARY CHEMICALS

Volume XXVI
Number 12
December 1950

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Published Monthly By
MAC NAIR-DORLAND COMPANY
254 W. 31 St., New York 1, N. Y.

Chicago Office:
333 N. Michigan Blvd.

Ira P. MacNair, Pres.
Grant A. Dorland, V. Pres. and Treas.

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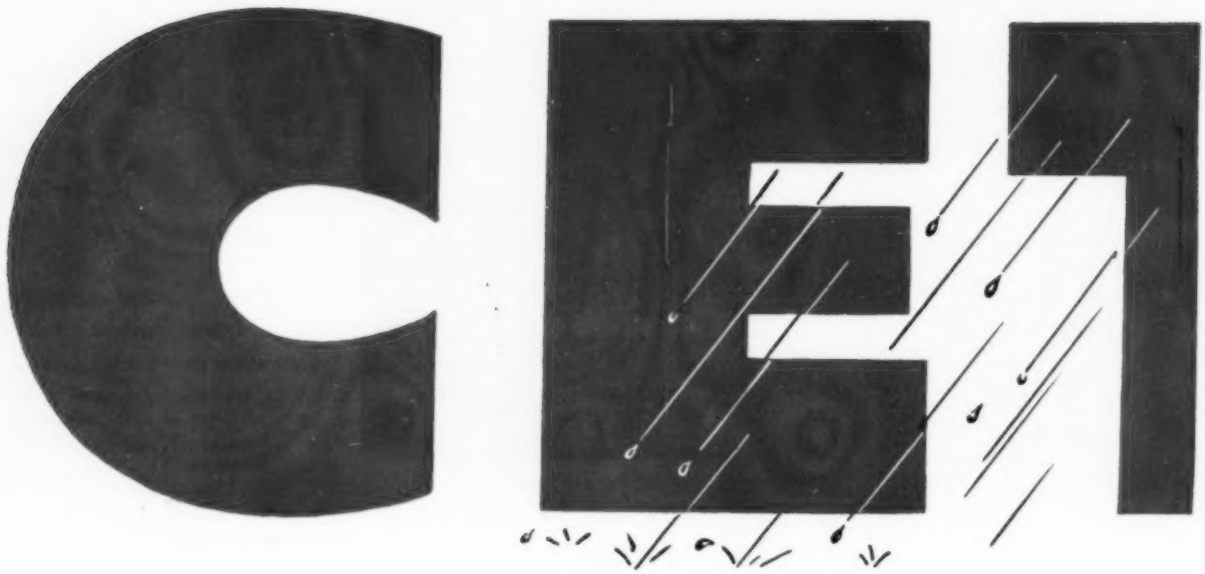
Subscription rates: U. S., $4.00 per year; Canadian, $5.00; Foreign, $6.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Entered as second-class matter June 16, 1949, at the Post Office, New York, N. Y., under the act of March 3, 1879.



SELF-LUSTRE ALL-WEATHER-SLIP-PROOF HYDRAOXATED CARNAUBA FLOOR WAX

NO SILICAS OR OTHER ABRASIVES USED-IT'S HYDRAOXATED!

CETOX performance will astonish you! All floors dazzle super safe—*even under tracked in rain, snow, hail or spilled water.* The dreaded thought of falling on shiny floors now is no more. CETOX provides super security underfoot. Actually, CETOX is 26% to 36% safer to walk on than the standards for an anti-slip wax.

Never before has there been such a wax. And never before has the slip been taken out of carnauba. Super Safe CETOX contains no gums, silicas or other abrasives. Only pure carnauba that is chemically hydraoxated super safe goes into CETOX.

Superior in every way, Super Safe CETOX levels into a high lustre, tough, protective coating . . . that withstands abusive foot traffic . . . frequent damp moppings . . . and tracked in water and soil. Note! Freezing does not harm Super Safe CETOX. That big money-making opportunity you always want —is now yours with SUPER SAFE CETOX. Get full particulars. Use the coupon today.

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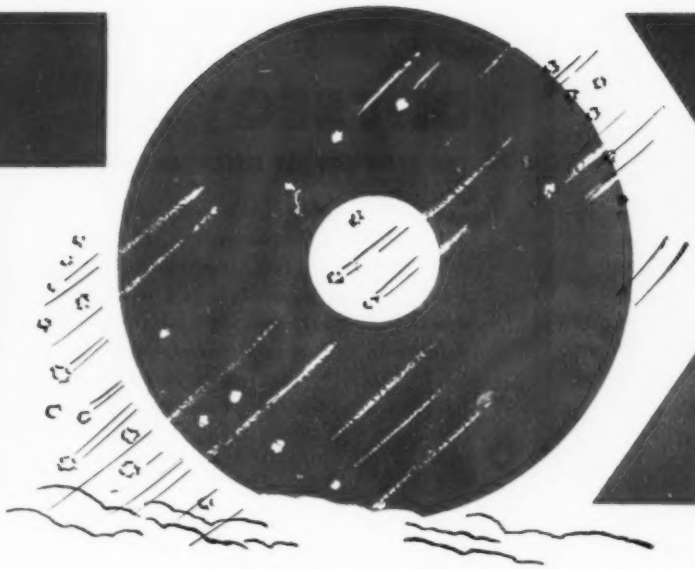
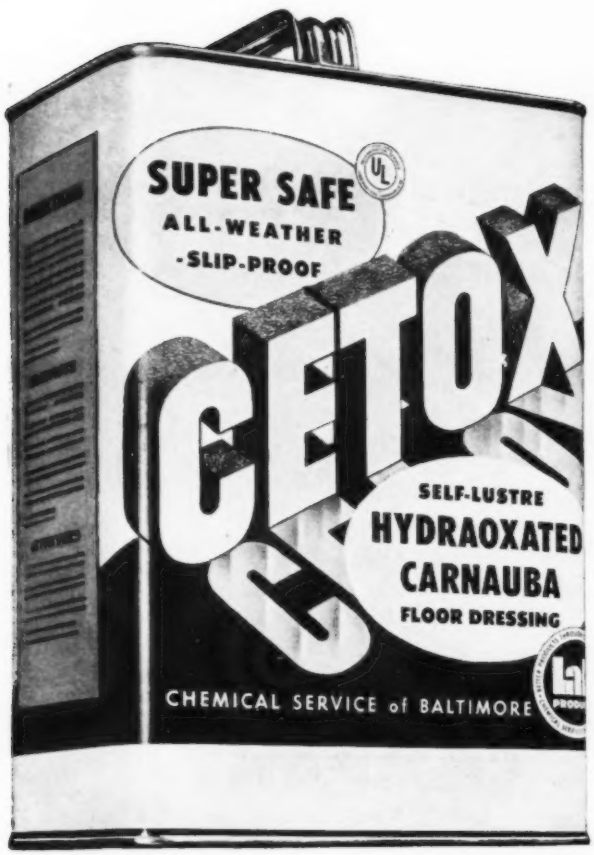


It's SUPER SAFE



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Feature press stories and big advertising spreads bring the vital Super Safe CETOX news to users of floor wax. Watch the publications your customers read. The demand for CETOX is building up fast!

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Rush me CETOX sample and literature. I want to get in on the tremendous opportunity offered by Super Safe CETOX.

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THE ECONOMICAL DETERGENT SILICATE

Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

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THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O—making it an economical base material for compounding.

DRYORTH*

THE HEAVY-DUTY DETERGENT SILICATE

Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O, which may also be used as an economical constituent of high pH cleaning compounds.

CRYSTAMET*

THE MEDIUM pH DETERGENT SILICATE

Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.

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We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

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The best features of the world's finest floor-waxes balanced and blended into one single wax.

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THE FLOOR WAX OF BALANCED PERFECTION

Balawax brings you the century old dream of floor-wax chemists—Highest lustre, Water resistance, Anti-slip—COMBINED!

Yes ☒ HIGHEST LUSTRE • *But won't scratch*

Yes ☒ WATER RESISTANT • *But easily removed*

Yes ☒ ANTI-SLIP • *But not tacky*

Here is the one wax that's right—AND SAFE—for *every* type of floor *and every location*. Use it for front door entrances, even next to elevators—Balawax takes the traffic.

Balawax is a triumphant blending and handling of PURE CARNAUBA WAX and its emulsifying agent to give you matchless walking ease PLUS durability; anti-slip PLUS highest lustre. Never tacky soft. Never powdery hard. ALWAYS *just right*.

Tested and acclaimed from coast to coast—in stores, mills, hospitals, institutions. Proved again and again in every type of climate and interior traffic—BALAWAX is the ONE wax that's best for ALL floors. The floor wax of *balanced perfection*. Hysan Products Co., 932 W. 38th Place, Chicago 9, Illinois.

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RED OIL—We've geared our production of Red Oil to meet the increased demand for low titre oleic acids. The oils contain reduced amounts of saturated acids . . . unsaponifiables are reduced to a minimum . . . titres run as low as 3°C.

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STEARIC ACID—Now, by combining modern scientific techniques with "know-how" that dates back to 1837, A. Gross & Company offer a HEAT STABLE Stearic Acid with a REDUCED ODOR LEVEL and increased resistance to deterioration.

This new odor-reduced "Special Improved Stearic Acid" is of importance to manufacturers of fine cosmetics, food emulsifiers, soaps, stearates and other products demanding the highest fatty acid content possible.

A. Gross' Stearic Acids follow the natural balance of Palmitic Acid and Stearic Acid as found in tallow. The importance of the Palmitic Acid content (55%) of natural Stearic Acid, whether for the production of quality face creams or durable buffing compounds, cannot be discounted.

For consumers who desire a higher percentage of Stearic Acid for less demanding applications, we have available a white Hydrogenated Tallow Fatty Acid with a Stearic Acid content of 70%.

COCONUT FATTY ACIDS—Where uniform Lauric Acid content is desired, A. Gross' Coconut Fatty Acids are your assurance of quality. Manufactured to specifications in two grades:

Regular Coconut Fatty Acids—with no fractions removed.
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Of interest to manufacturers of cosmetics, shampoos, condensates, alkyd resins.

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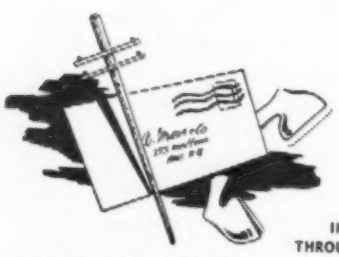
SOYA BEAN FATTY ACIDS—A quality fatty acid well accepted by the alkyd resin industry . . . remarkably stable and heat resistant for light colored alkyd resins. Will pass the most rigid color requirements of alkyd resin manufacturers.



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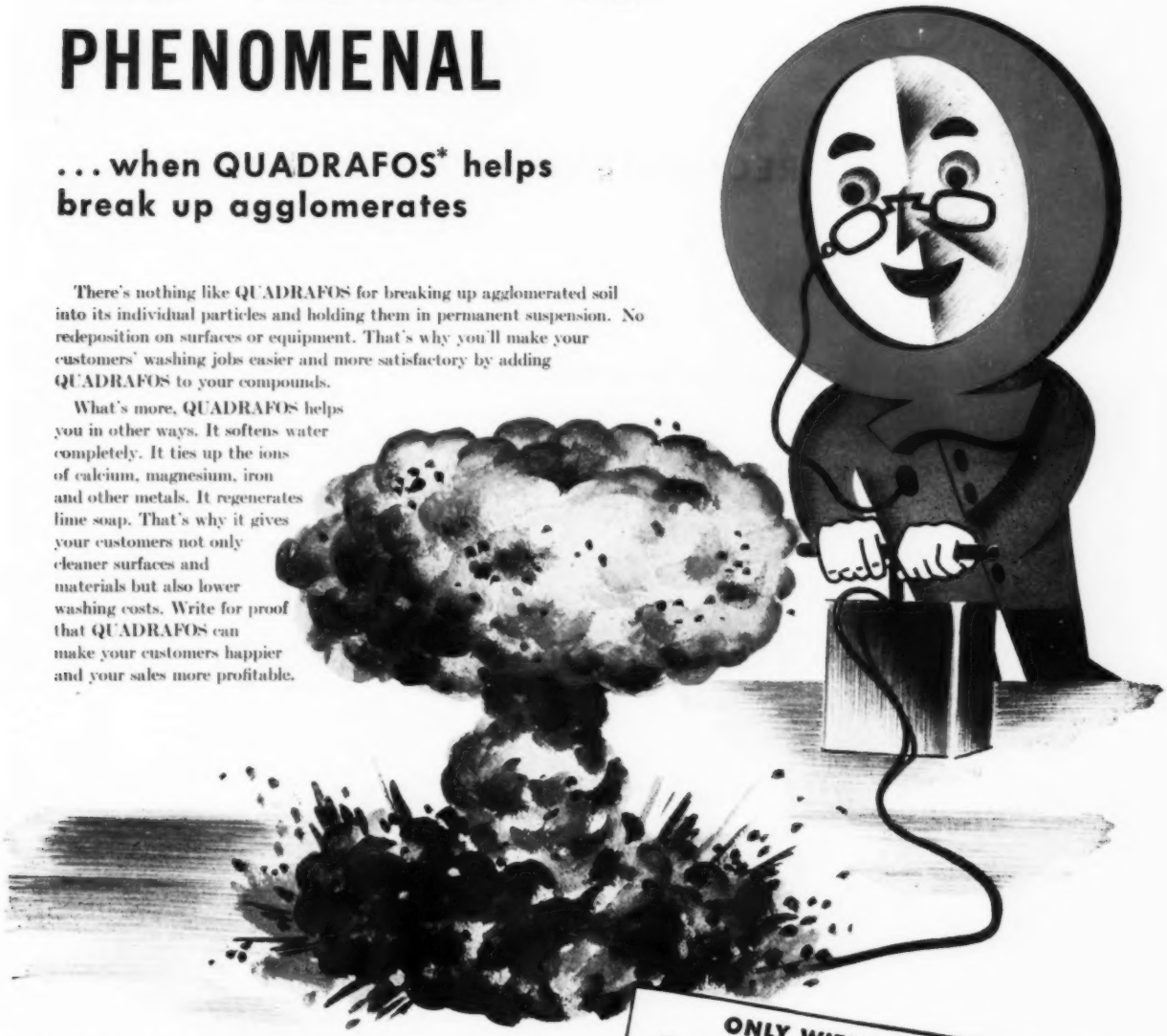
. . . when QUADRAFOS* helps break up agglomerates

There's nothing like QUADRAFOS for breaking up agglomerated soil into its individual particles and holding them in permanent suspension. No redeposition on surfaces or equipment. That's why you'll make your customers' washing jobs easier and more satisfactory by adding QUADRAFOS to your compounds.

What's more, QUADRAFOS helps you in other ways. It softens water completely. It ties up the ions of calcium, magnesium, iron and other metals. It regenerates lime soap. That's why it gives your customers not only cleaner surfaces and materials but also lower washing costs. Write for proof that QUADRAFOS can make your customers happier and your sales more profitable.



softens water without precipitation . . . deflocculates

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- ☐ Free rinsing
- ☐ Better emulsification of fats and oils
- ☐ .....

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Even the drums that bring you the *new*, granular Santomerse No. 1 are especially designed to make your job of blending cleaning compounds easier. The drums are waxed inside and carefully sealed to shut out moisture and air. As a result, Santomerse No. 1 reaches you in tip-top condition . . . free-flowing . . . easy to blend. And, if you sell in bulk, the drum can be re-used to carry your own product.

Granular Santomerse No. 1 mixes thoroughly with phosphates, silicates and carbonates, giving you mechanical blends that have less tendency to stratify. Santomerse No. 1 is available in three densities so that you can get the bulking you want.

Santomerse No. 1, granular, chemically identical with Santomerse No. 1 flakes, is effective in hard or soft water . . . in alkaline, neutral or acid solutions . . . in hot or cold cleaning operations. An all-purpose detergent and wetting agent, Santomerse No. 1 lifts out dirt particles and holds them in suspension so they cannot be redeposited . . . so they can be rinsed away quickly and easily.

Why not investigate the possibilities of making better cleaning compounds with the *new*, granular Santomerse No. 1? For further information, mail the coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Phosphate Division, 1777-L South Second Street, St. Louis 4, Missouri. **Santomerse: Reg. U. S. Pat. Off.*

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

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CONTROLLED DENSITY
Manufactured in three densities . . . gives you bulking to suit your products and markets.

COMPATIBILITY
Santomerse No. 1 is compatible with other detergents and builders.

EASY BLENDING
Available in flakes or granules, giving you a selection to blend readily with other ingredients without stratifying.

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Santomerse No. 1 is shipped in wax-lined drums to protect quality in transit and storage.

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Santomerse No. 1 . . . warehoused in 13 cities, coast to coast . . . will be shipped from a point near you.

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Company.....

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City..... *Zone*..... *State*.....

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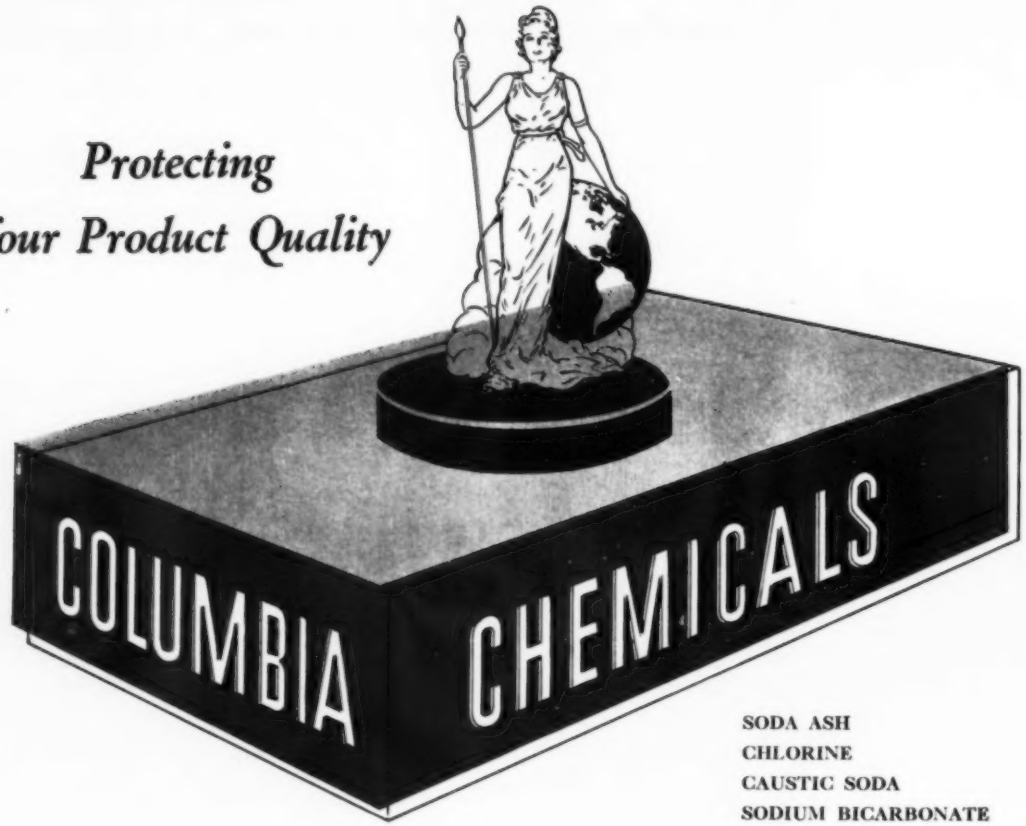
Protecting Your Product Quality



When you use Columbia chemicals, you protect the quality of your products. A background of more than fifty years experience enables Columbia production technicians to employ controlled methods and supervision that assure chemicals which meet your most exacting standards.

The same thoughtfulness and care that go into the manufacture of Columbia chemicals also are carried on throughout packaging, shipping and delivery.

Skilled personnel, conveniently located plants, accurate attention to detail, and experienced technical assistance are other advantages favorable to Columbia customers.

Check with Columbia on your next chemical requirements. You'll find it pays in many ways. Pittsburgh Plate Glass Company, Columbia Chemical Division, Fifth at Bellefield, Pittsburgh 13, Pennsylvania.

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SILENE EF
(*Hydrated Calcium Silicate*)
CALCENE T
(*Precipitated Calcium Carbonate*)
HI-SIL
(*Hydrated Silica*)
PACIFIC CRYSTALS
(*Sodium Sesquicarbonate*)
BORAX
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ORTHO-DICHLOROBENZENE
MONO-CHLOROBENZENE
BENZENE HEXACHLORIDE
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Are you a volume consumer

of synthetic detergents?

Are you interested in saving almost half of your detergent costs? Then ULTRAWET 35KX is your answer. This new member of the Atlantic family of alkyl aryl sulfonates is tailor-made to combine excellent performance and ease of handling.

ULTRAWET 35KX is a light amber slurry, containing a minimum of 35% solids of which 90% is active. The extremely low inorganic salt content insures a wide variety of uses, including textile processing, emulsion polymerization and as a charge stock for drying operations. The ingredient is a high molecular weight alkyl aryl sulfonate characterized by exceptional foaming, wetting and detergent qualities. An important feature is that ULTRAWET 35KX has a low haze point —90° F.—for ease in handling and storage.

To take full advantage of the real economies offered by the use of ULTRAWET 35KX, bulk storage facilities are necessary. Atlantic can be of real assistance in furnishing engineering details for such facilities. Call on us. The Atlantic Refining Company, Chemical Products Section, 260 S. Broad St., Philadelphia 1, Pa.

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Division of Dominion Rubber Co., Ltd., Canada
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It pays to specify

SOLVAY

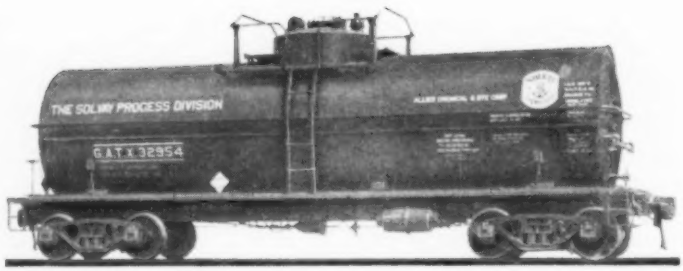
TRADE-MARK REG. U. S. PAT. OFF.

LIQUID CAUSTIC POTASH

LOW IN IRON
and other impurities

For Exceptional Purity
For Low Turbidity
specify SOLVAY
CAUSTIC POTASH

- 49-50% Liquid in Tank Cars
- 45% Liquid in Drums
- Also in Dry Forms



SOLVAY SALES DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

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Soda Ash · Caustic Soda · Caustic Potash · Calcium Chloride
Chlorine · Potassium Carbonate · Sodium Bicarbonate · Nytron
Specialty Cleansers · Sodium Nitrite · Ammonium Bicarbonate
Para-dichlorobenzene · Ortho-dichlorobenzene · Monochlorobenzene
Methanol · Ammonium Chloride · Formaldehyde

Tests show reduction of skin bacteria on hands with "DYSEPT" containing hexachlorophene

This new liquid soap perfectly meets the needs of surgeons, physicians, hospitals, clinics, restaurants—any application where it's important to maintain skin bacterial population at a minimum level. Independent laboratory tests demonstrate that convenient "DYSEPT"—with 5% hexachlorophene to the anhydrous soap content—is both bactericidal and bacteriostatic with continuous daily use. Charts show percentage reduction.

CHART No. 1. Percentage reduction in resident bacteria on hands with continuous daily use of undiluted "DYSEPT" for 4 consecutive days. Tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."

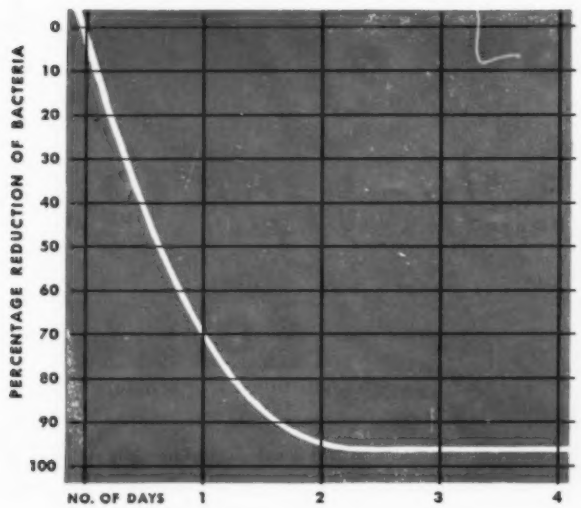
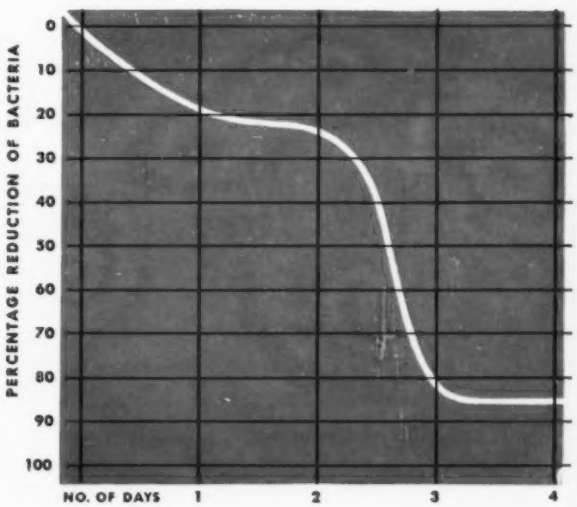


CHART No. 2. Percentage reduction in resident bacteria on hands with continuous daily use of "DYSEPT" diluted 1:1 with water for 4 consecutive days. Again, tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."



NOTE THESE FACTS ABOUT THE USE OF "DYSEPT"

"DYSEPT," containing 1% hexachlorophene to the total volume, leaves an invisible film not removed by rinsing which, with application one to three times daily for at least five days a week, reduces bacterial skin flora to about 5% of the usual amount and maintains that level. It has been found to reduce surgical scrub-up contact time with daily use. "DYSEPT" is non-toxic and non-irritating, and acts effectively even when diluted with water. A clinical brochure, with laboratory reports, suggestions for using and other technical data, may be obtained by mailing the coupon. "DYSEPT" is available through all Davies-Young distributors.

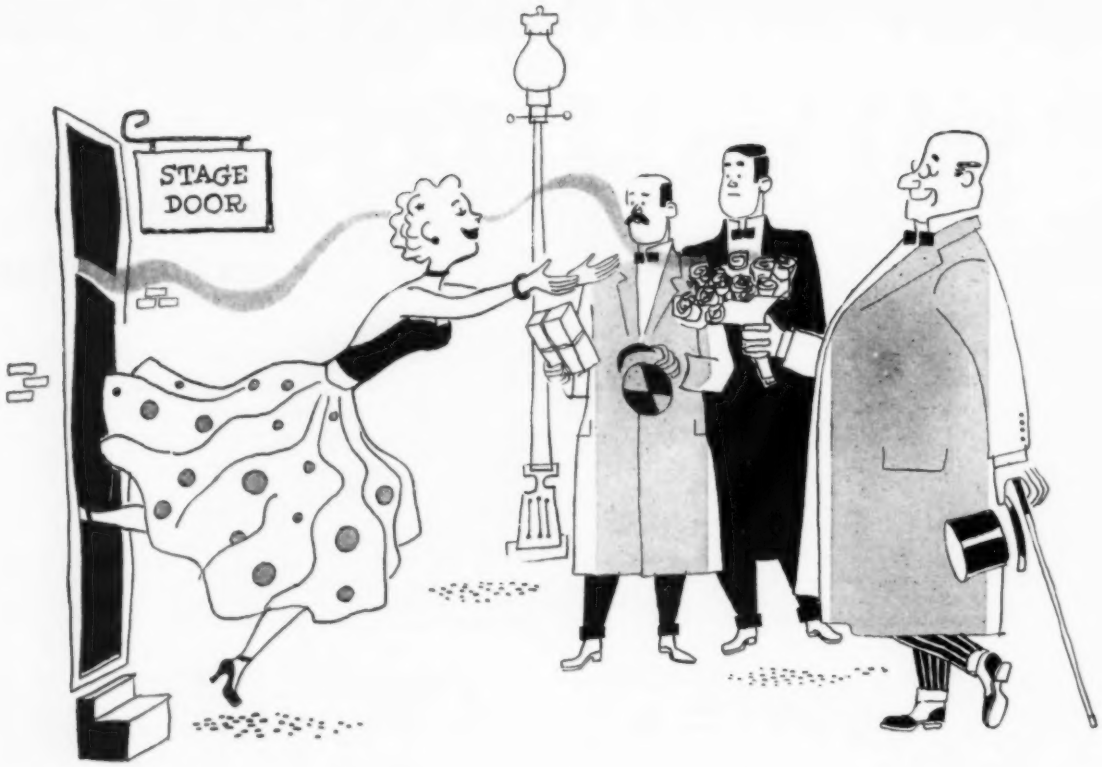
THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO
Also makers of
"DYSEPT" Hand Lotion
(containing Hexachlorophene)

MAIL THE COUPON FOR SAMPLE AND DETAILS

THE DAVIES-YOUNG SOAP COMPANY SSC-1250
BOX 995, DAYTON 1, OHIO

Please send free sample of
- ☐ "DYSEPT" Liquid Soap and clinical brochure.
- ☐ "DYSEPT" Hand Lotion

NAME_____
ADDRESS_____
CITY_____
STATE_____



The Way to a Woman's Heart...

OR HER PURSE... is the *right* fragrance for your product. Finding the answer to your perfuming problems is easy when you consult with our chemists at Naugatuck Aromatics.

They have a wealth of experience in Basic Perfume Materials and Aromatic Chemicals and they will be glad to work with you.

They can show you how to mask or denature unpleasant odors of raw materials. They can show you how to add a sales-stimulating fragrance—or a neutral tone—to your finished product.

Write, or call us—soon!

NAUGAROMES—For various industrial and commercial uses.

SOAPOLS—For bar, paste and liquid soaps.

SHAMPAROMES—For liquid, cream and paste shampoos.

MODERN BASES—For fine perfumes, colognes, toilet waters, toilet preparations, etc.

CREAMODORS—For all types of creams and lotions.

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DIVISION OF UNITED STATES RUBBER COMPANY

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Toronto— Montreal

Sole Distributors for:

BRUNO COURT, S. A., GRASSE, FRANCE

MANUFACTURERS OF AROMATIC CHEMICALS—IMPORTERS OF ESSENTIAL OILS

there's more power for whitening in calcofluor whitening agents*

All types of commercial and household soaps and detergents can be given superior whitening power through the use of Calcofluor whitening agents

Consider the important characteristics imparted to these new products by Calco research.

. . . Ultraviolet light absorption (without absorbing any appreciable amount of visual light).

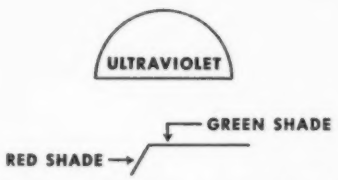
. . . Good leveling characteristics (giving uniform distribution).

. . . Types suitable for treating effectively any type of fabric.

. . . Excellent fastness to hypochlorite.

To receive helpful technical data, send the coupon below for Bulletin No. 811, "Optical Bleaches in Household Soaps and Detergents."

*Trade-Mark



Hold a cotton fabric treated with whitening agent under an ultraviolet lamp in a dark room so that part of the cloth is illuminated directly and part obliquely. The direct part will be greener in hue. This phenomenon was first observed by Bezold and Brücke in 1873, and is now commercially important in the evaluation of brightness. Consult us about the significance of this test and any other questions as to the evaluation of whitening agents.

AMERICAN Cyanamid COMPANY

CALCO CHEMICAL DIVISION
DYESTUFF DEPARTMENT
BOUND BROOK, NEW JERSEY

Calco®

American Cyanamid Company
Calco Chemical Division
Bound Brook, New Jersey

Send me a free copy of your Technical Bulletin No. 811, "Optical Bleaches in Household Soaps and Detergents."

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*Position*_____

*Company*_____

*Address*_____

we DO count 'em this way!

. . . and we have been real successful over a period of years in recommending perfumes that bring results.

Knowing perfume tastes, understanding the types preferred in certain products, being aware of the likes and dislikes of the markets you want to sell, comes only from a wealth of experience and a background of technical leadership.

The interest of the van Ameringen-Haebler staff of perfume chemists is not just in developing a pretty smell . . . but also in recommending the ***right*** perfume for the particular product . . . one that's bound to be liked and accepted and bring back repeat business.

A product's perfume is a powerful salesman — select yours carefully with the help of men who know perfume from every angle — the van Ameringen-Haebler, staff.

MANUFACTURERS AND CREATORS OF THE FINEST PERFUME MATERIALS

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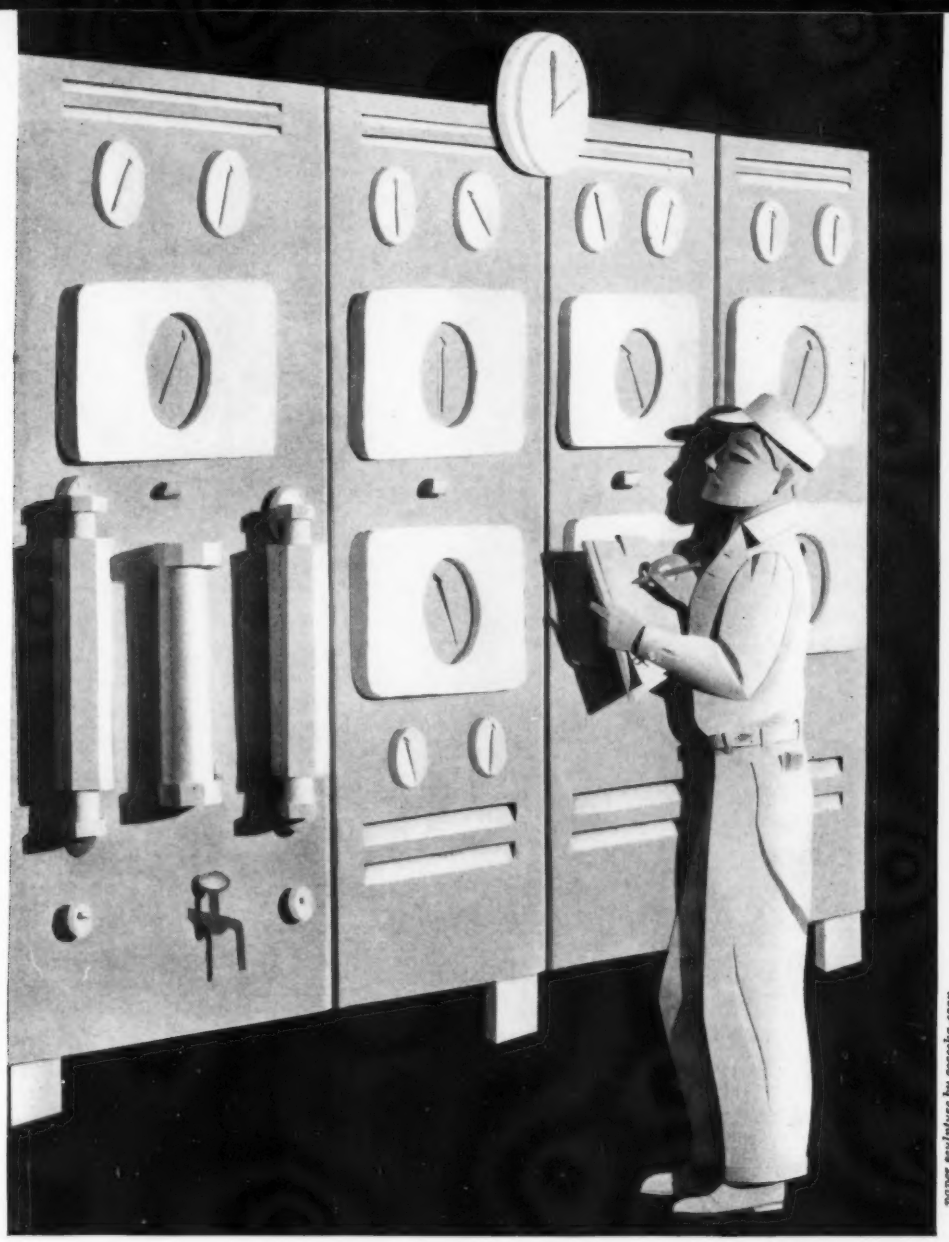


paper sculpture by gorecka-egan

check and double check

modern equipment for testing and control helps to maintain
the unvarying high quality of Niagara products.
Depend on Niagara for absolute uniformity.

EBG* Liquid Chlorine
NIALK* Caustic Potash
NIALK Carbonate of Potash
NIALK Paradichlorobenzene
NIALK Caustic Soda
NIALK TRICHLORethylene
NIAGATHAL*
(Tetrachloro Phthalic Anhydride)

*Trade-mark

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, New York

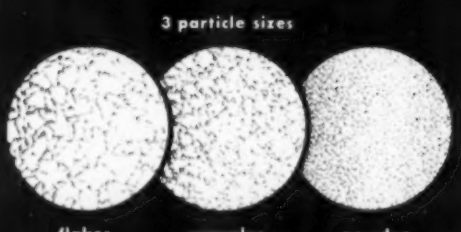
no need to look further for **synthetic detergents**

SUPERIOR SYNTHETIC DETERGENT MATERIALS ARE AVAILABLE FROM ORONITE IN THESE THREE FORMS:

1. **DETERGENT ALKANE** For detergent or chemical manufacturers who have suitable sulfonating and processing equipment, Oronite Alkane is unique in type, quality and economy. A water-white, wholly synthetic alkyl aryl hydrocarbon, it is eminently suitable for making detergents and wetting agents of the highest quality.
2. **DETERGENT SLURRY** For detergent processors and manufacturers with blending and drying equipment. Detergent Slurry is an alkyl aryl sulfonate in paste form, easily blended for producing quality detergents.
3. **DRY DETERGENTS** Alkyl aryl sulfonates in dry form. New white color—available in 3 particle sizes, readily adaptable to compounding and repackaging operations.

Detergents from Oronite Alkane, in addition to providing unexcelled cleaning action are: superior emulsifiers of fats and greases; stable and effective in strong acid and alkali solutions; effective as reducers of surface and interfacial tension even in low concentrations. For complete detailed information, write the Oronite office nearest you.

DRY DETERGENTS D-40 AND D-60:
NEW, WHITER COLOR MAKES THEM EXTREMELY ADAPTABLE FOR ANY COMPOUNDING OPERATION.



ORONITE CHEMICAL COMPANY
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THE NAME TO WATCH IN CHEMICALS

ORONITE CHEMICAL COMPANY

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STANDARD OIL BLDG., LOS ANGELES 15, CALIF.
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blue says "buy me!"

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Maryland Blue

ALSO AVAILABLE IN CLEAR GLASS

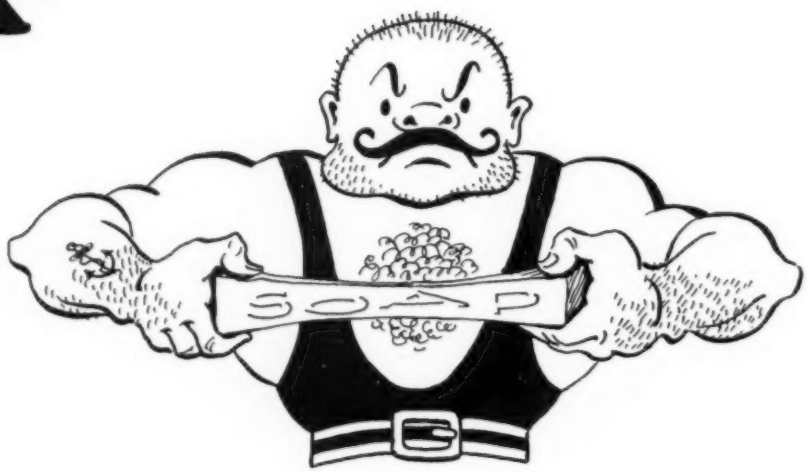
Is your package merely a *container*? Or does it perform double duty as a *container* and a *merchandiser*? Many famous brands have turned to Maryland Blue Glass for packaging that excels in *both* vital functions.

Blue acts as a powerful advertising, merchandising and selling tool. Blue makes your product stand out in the store . . . in the home. Blue is easier to see and remember. Blue gives the outward appearance of your product the quality and distinction that says, "*Buy Me!*" So follow the lead of many famous brands . . . pack to attract in Maryland Blue. Write today for samples and details.

MARYLAND GLASS CORPORATION | **BALTIMORE 30, MARYLAND**

RENEX*

Makes Soap Stretch



. . . today's outstanding detergent development means more cleaning power from less soap

MAKERS of cleaning compounds are turning up new tricks with RENEX, the new 100% non-ionic detergent which comes in either liquid or powdered form. And more and more compounders are combining RENEX with soap to build up its detergent power.

With RENEX, detergent power in hard water is built up as high as 50% greater than tallow soap alone—*nearly 20% greater than ordinary built soaps!* And RENEX-soap compounds do away with hard-water "rings" and scum.

RENEX is versatile. Dairy cleaners, floor cleaners, wall cleaners, and textile scouring agents are just a few of the many types of cleaning compounds in which RENEX makes the difference between "ordinary" and "excellent." And because RENEX can be used to hold down useless foam, it is ideal for cleaning compounds for automatic home dishwashers and laundry machines.

RENEX is low in cost. It is made from plentiful raw materials. Write today for latest literature which includes typical formulas for compounding. Samples available for research.

*Reg. U. S. Pat. Off.

ATLAS INDUSTRIAL CHEMICALS DEPARTMENT

CHEMICALS ATLAS EXPLOSIVES

ATLAS POWDER COMPANY, Wilmington 99, Del. • *Offices in principal cities* • *Cable Address—Atpowco*
ATLAS POWDER COMPANY, CANADA, LTD., Brantford, Canada

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1951 SOAP SALES

You Are Destined To Sell More Soap Than Ever Before With Moore's Famous Soap Dispensers

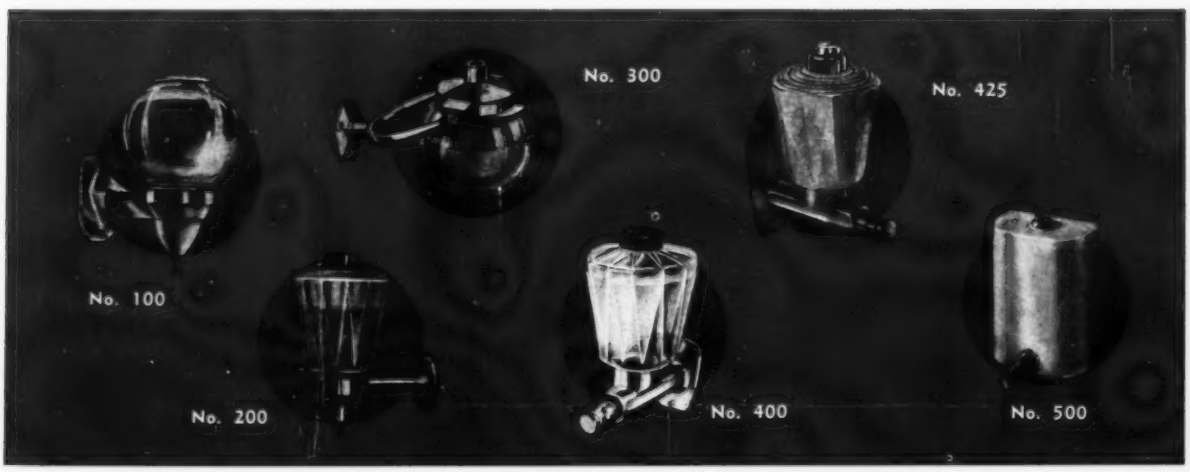
Greet 1951 With The *Moore* Line Of Dispensers And As Soap Flows Out Of Them Freely, Dollars Will Roll In To You

No wonder Moore Soap Dispensers are found in busy washrooms throughout America. They are the last word in modern design and efficiency.

And there's a type for every need: liquid, powder or lather. We can also supply you with complete gravity systems with trouble-free valves.

MOORE BROS. COMPANY
100 WARREN ST.,
NEW YORK 7, N.Y.

Shown here are part of our line of dispensers.



WHY PAY HIGH PRICES FOR ESSENTIAL OILS?

change to . . .

JAVONELLA

PERFECT FOR PERFUMING...

- LAUNDRY SOAPS
- WASHING POWDERS
- LIQUID CLEANSERS
- POLISHES, ETC.

NOW, MORE THAN EVER, JAVONELLA OFFERS THESE IMPORTANT ADVANTAGES!

- It's a manufactured article . . . free from the price fluctuations of natural essential oils such as Citronella, Sassafras, etc.
- Its high quality never varies, enabling you to manufacture uniformly dependable products.
- Always lower in cost than the natural oils, particularly now with citronella prices on the rise, its use results in production economies and higher profits without lowering quality standards.

WRITE FOR SAMPLE AND QUOTATION

AROMATICS • PERFUME BASES • ESSENTIAL OILS

FELTON CHEMICAL COMPANY, INC.

599 Johnson Ave., Brooklyn 6, N. Y.

PLANTS: BROOKLYN, N. Y. • LOS ANGELES, CAL. • MONTREAL, QUE. • PARIS, FRANCE

SALES OFFICES: ATLANTA • BOSTON • CHICAGO • DALLAS • PHILADELPHIA ST. LOUIS • TOLEDO • TORONTO

STOCKS CARRIED IN PRINCIPAL CITIES

Add NYTRON

TRADE-MARK REG. U.S. PAT. OFF.

to
PHOSPHATES
SILICATES
ACIDS
CAUSTIC
and other SODAS
SOAPS

FOR Faster Wetting!
Better Penetration!
Thorough Rinsing!
Improved Detergency!

A SOLVAY PRODUCT

NYTRON is a totally different type of synthetic organic detergent. Its high and rapid solubility makes NYTRON go into solution almost instantly, in hot or cold water. It remains chemically stable over a wide range of temperature, acidity or alkalinity.

NYTRON removes oil and grease from fabrics, surfaces and metal parts; and it counteracts hard water difficulties. In addition, NYTRON will foam in any normal concentration of acid or alkali, in distilled or sea water, in ice cold or boiling water. Try it—see why NYTRON'S *exclusive combination of properties cannot be matched by any other synthetic organic detergent!*

Samples of NYTRON—plus informative literature regarding its uses—are available on request. Get a sample . . . try it . . . convince yourself! Mail the coupon now.

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

I want to try NYTRON and judge its results for myself. Please send me a free sample, plus detailed non-technical information and specific technical data.

Name.....

Title.....

Company.....

Type of Business.....

Address.....

City.....Zone.....State.....

SSC-12

She's being sold

Yes, *Wyandotte's Carbose D** can put *sell* in your suds. The addition of even 1% Carbose D—in your laundry or dishwashing product—helps bring housewives back to your brand.

They notice that a Carbose-enriched compound doesn't dry out or irritate their hands. They notice the "soapy feel" that Carbose D contributes, are more at home with it. They notice that suds last longer, that dishes and fabrics dry cleaner.

Yes, Carbose D builds a better product. Try Carbose D in your brand. You'll find it boosts sales, brings customers back. Write us for the full profit-story.

•

**Carbose D is a grade of Sodium CMC developed by Wyandotte specifically for use as a detergent promoter.*

•

Wyandotte Chemicals Corporation

Wyandotte, Mich. • *Offices in Principal Cities*

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
PROPYLENE DICHLORIDE
AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS

Wyandotte
REG. U. S. PAT. OFF.

CLEANUP on SALES with the CLEANER that SELLS!

kcep

Pronounced "KEP"

CONCENTRATE Neutral Cleaner

NOW has EXTENE* added for amazing scum-lifting action.

Fastest moving concentrate in our entire quality line. Jobbers report that orders repeat. Phones ring fast when users see how much easier and better KCEP cleans and conditions. KCEP Concentrate is a neutral cleaner that combines the emulsifying properties of soap with the wetting properties of synthetics. It gives safe cleaning that is more than surface cleaning. KCEP actually brings floors back to life . . . removes soap-scum buildup that hides floor brightness . . . gets through to the natural color so that floors regain their rich appearance. KCEP is highly concentrated, so it's extra economical.

* **EXTENE gives the extra cleaning action . . . makes it easy to remove surface-dulling film and stubborn, clinging scum that just won't give up to ordinary floor cleaners.**

PPC SINCE 1918

- ☆ **ONE OF THE BEST CLEANERS KNOWN** for asphalt and rubber tile, linoleum and other soft floors.
- SAFE on any surface where water is not harmful.
- EXTRA HEAVY DEMAND in hard-water areas . . . KCEP is effective in hot or cold, hard or soft water.
- ECONOMICAL . . . highly concentrated so a little goes a long way.
- REMOVES WAX when used in recommended concentration. Won't harm the floor.
- FREE RINSING. Just suds the floor . . . then a single rinse is usually sufficient. (Prevents soap buildup that makes dull floors.)
- LEAVES CLEAN FRESH ODOR.

USE THIS COUPON FOR SPECIAL SAVING

Get 15-gallon drum at same price per gallon as 55-gal drum order.

Peck's PRODUCTS COMPANY

610 E. CLARENCE, ST. LOUIS 15, MO.

PECK'S PRODUCTS COMPANY
610 E. CLARENCE,
ST. LOUIS 15, MO.

☐ Please send descriptive folder on KCEP

☐ Ship introductory 15-gallon drum at same price per gallon as 55-gal. drum order.

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City & Zone_____ State_____

MONSANTO'S STEROX CD is a 100%-active detergent, especially valuable where low-sudsing, controlled-sudsing or nondusting compounds are desired.

This may be YOUR key to greater sales in '51...

STEROX CD

If you are improving your present line or developing new products for 1951, we suggest that you investigate Monsanto Sterox CD. Try it and see how Sterox CD can help your product deliver better service to your customers and bring you greater sales.

Nonionic Sterox CD blends easily and efficiently with anionic detergents and soaps . . . with cationic detergents . . . with alkaline "builders" such as phosphates, silicates and carbonates. It often can be added advantageously to anionic detergents and soaps. Its efficiency is stepped up when compounded with "builders." Sterox CD also is used effectively with acid-type cleaners.

Low-sudsing, 100%-active Sterox CD is high in detersive efficiency over a wide range of concentrations and temperatures . . . in hard or soft water . . . over the entire pH range. Sterox CD does not form insoluble soap scums in hard water.

Look over the properties of Sterox CD, shown in the column at the right. Pick out the qualities that you would like to add to your product. Then, try Sterox CD and see how efficiently it delivers the qualities you want. For technical literature, mail the coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Phosphate Division, 1703-M South Second Street, St. Louis 4, Missouri.

Properties of STEROX CD

Nonionic-type, 100%-active detergent, surface-active agent and emulsifier.

CHEMICAL PROPERTIES:

A polyoxyethylene ester . . . nonionic-type, yielding a solution with practically no ions subject to inactivation by water hardness . . . compatible with anionic detergents and soaps, with cationic detergents and with alkaline "builders" . . . can be used with acid-type cleaners.

PHYSICAL PROPERTIES:

Pale-yellow to light-amber liquid . . . medium viscosity at room temperature . . . pour point, approximately 50° F. . . . soluble in water in all proportions at room temperature . . . mild, sweet fatty odor that is not objectionable. Sterox CD can be perfumed easily if desired.

SUGGESTED USES:

Wherever controlled sudsing and / or controlled dusting is desired . . . in laundry compounds . . . dishwashing compounds . . . metal cleaning and treating . . . paint and wall cleaners . . . textile processing . . . paste cleaners . . . barrier creams . . . detergents for sanitation . . . floor cleaners . . . liquid detergents.

AVAILABLE LITERATURE:

Technical Bulletin No. P-129 will be sent free upon request.

Sterox: Reg. U. S. Pat. Off.

☆ ☆ ☆

District Sales Offices:

Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

MONSANTO CHEMICAL COMPANY
Phosphate Division
1703-M South Second Street, St. Louis 4, Missouri

Please send, without cost or obligation. . . . . Technical Bulletin No. P-129.

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Company.....

Street.....

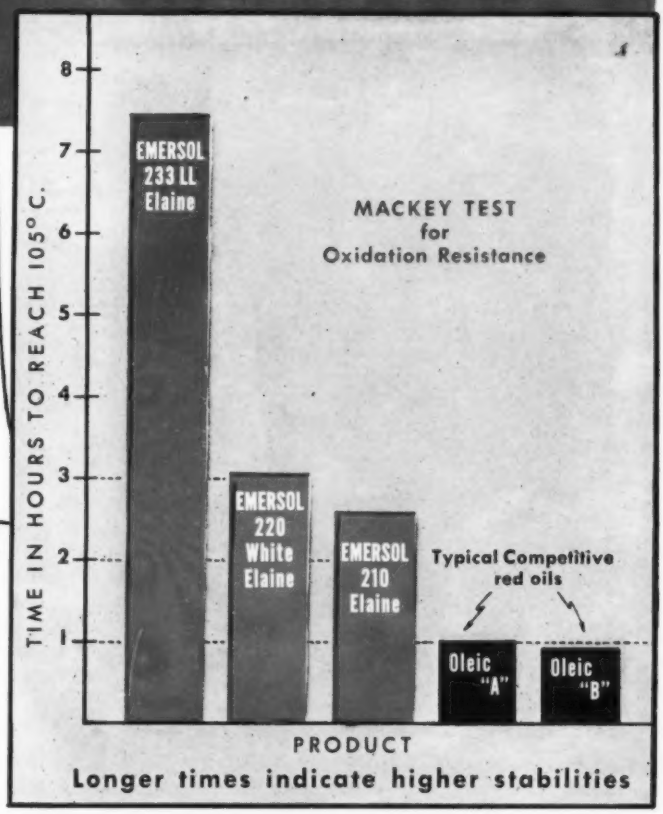
City..... *Zone*..... *State*.....

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

EMERY OLEIC ACIDS HAVE 2½ to 7 TIMES GREATER OXIDATION RESISTANCE!

Tests prove greater stability compared with ordinary Oleic Acids.



With prices *below* prewar levels, Emery Oleic Acids are replacing inferior substitutes to improve finished product quality and performance. Their outstanding characteristics include higher-than-ever saponifiable content (lower unsaponifiable) and unmatched color and odor stability.

The Mackey Test, a convenient means of measuring resistance to auto-oxidation, confirms the unequalled stability of these Emery Oleic Acids. While the regular Emersol Elaines are 2½ to 3 times more resistant to oxidation than competitive double-distilled oleic acids, Emersol 233LL Elaine is up to 7 times more resistant! In fact, Emersol 233LL is so stable and light in color that in many uses where the excellent color and oxidation stability of a stearic acid is the prime requisite, it can be substituted for the high-titer, saturated fatty acid.

For best results in uses involving oleic acids, insist upon Emersol Elaines.

WORLD'S LEADING PRODUCER OF FATTY ACIDS

EMERY INDUSTRIES, INC.

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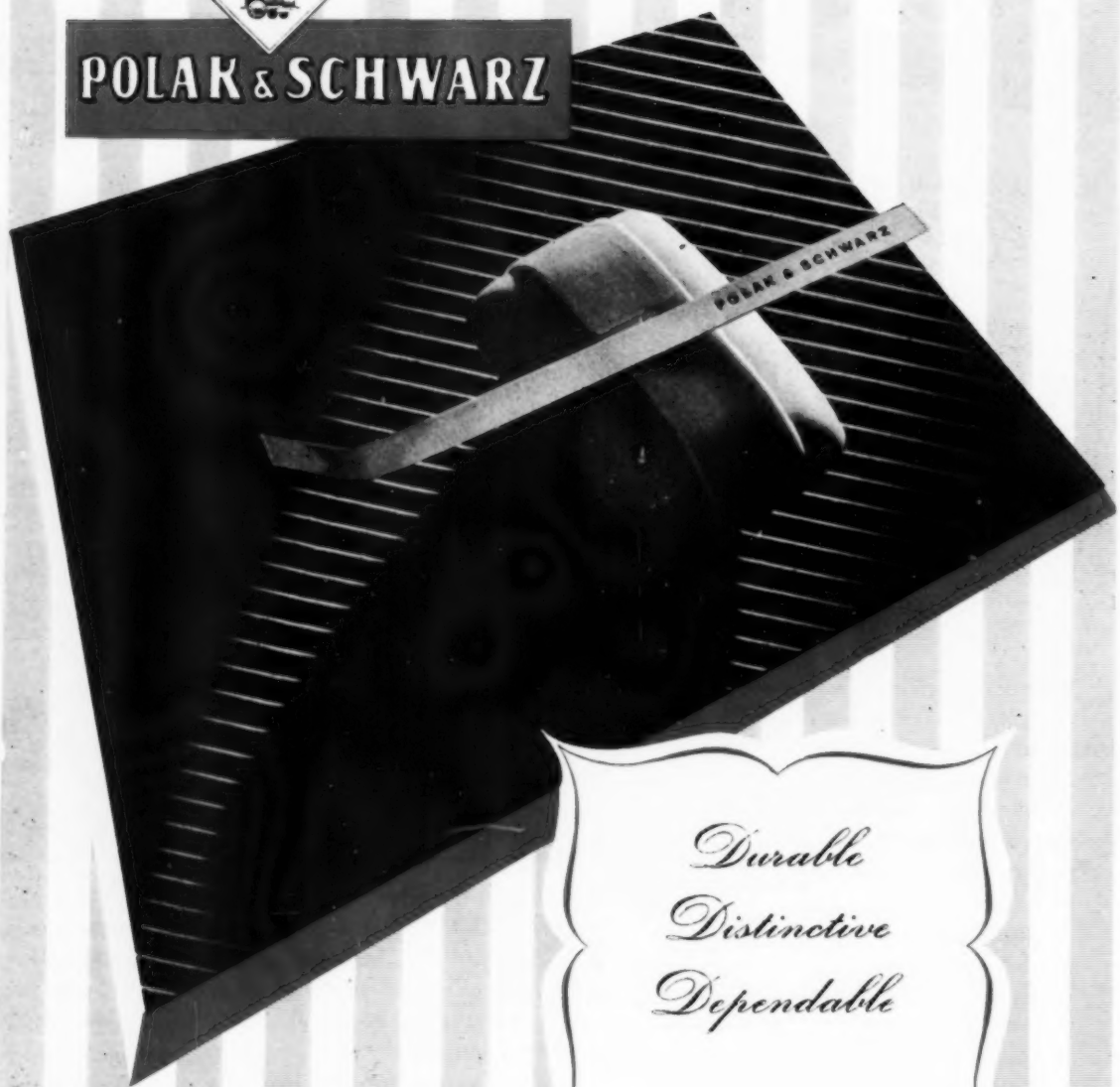
POLAK & SCHWARZ



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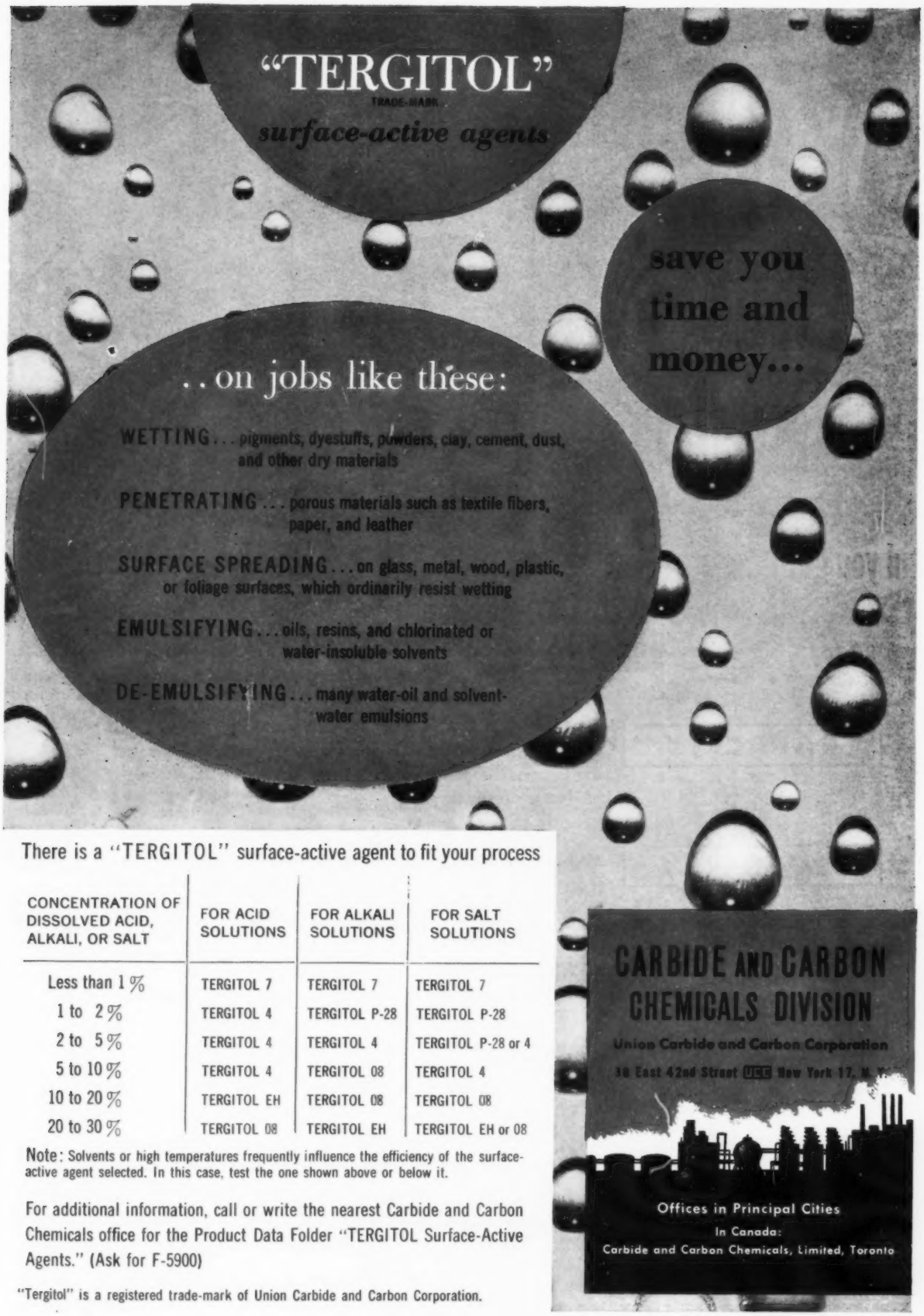
"TERGITOL"
TRADE-MARK
surface-active agents
save you time and money...
..on jobs like these:
WETTING... pigments, dyestuffs, powders, clay, cement, dust, and other dry materials
PENETRATING... porous materials such as textile fibers, paper, and leather
SURFACE SPREADING... on glass, metal, wood, plastic, or foliage surfaces, which ordinarily resist wetting
EMULSIFYING... oils, resins, and chlorinated or water-insoluble solvents
DE-EMULSIFYING... many water-oil and solvent-water emulsions

There is a "TERGITOL" surface-active agent to fit your process

CONCENTRATION OF DISSOLVED ACID, ALKALI, OR SALT	FOR ACID SOLUTIONS	FOR ALKALI SOLUTIONS	FOR SALT SOLUTIONS
Less than 1%	TERGITOL 7	TERGITOL 7	TERGITOL 7
1 to 2%	TERGITOL 4	TERGITOL P-28	TERGITOL P-28
2 to 5%	TERGITOL 4	TERGITOL 4	TERGITOL P-28 or 4
5 to 10%	TERGITOL 4	TERGITOL 08	TERGITOL 4
10 to 20%	TERGITOL EH	TERGITOL 08	TERGITOL 08
20 to 30%	TERGITOL 08	TERGITOL EH	TERGITOL EH or 08

Note: Solvents or high temperatures frequently influence the efficiency of the surface-active agent selected. In this case, test the one shown above or below it.

For additional information, call or write the nearest Carbide and Carbon Chemicals office for the Product Data Folder "TERGITOL Surface-Active Agents." (Ask for F-5900)

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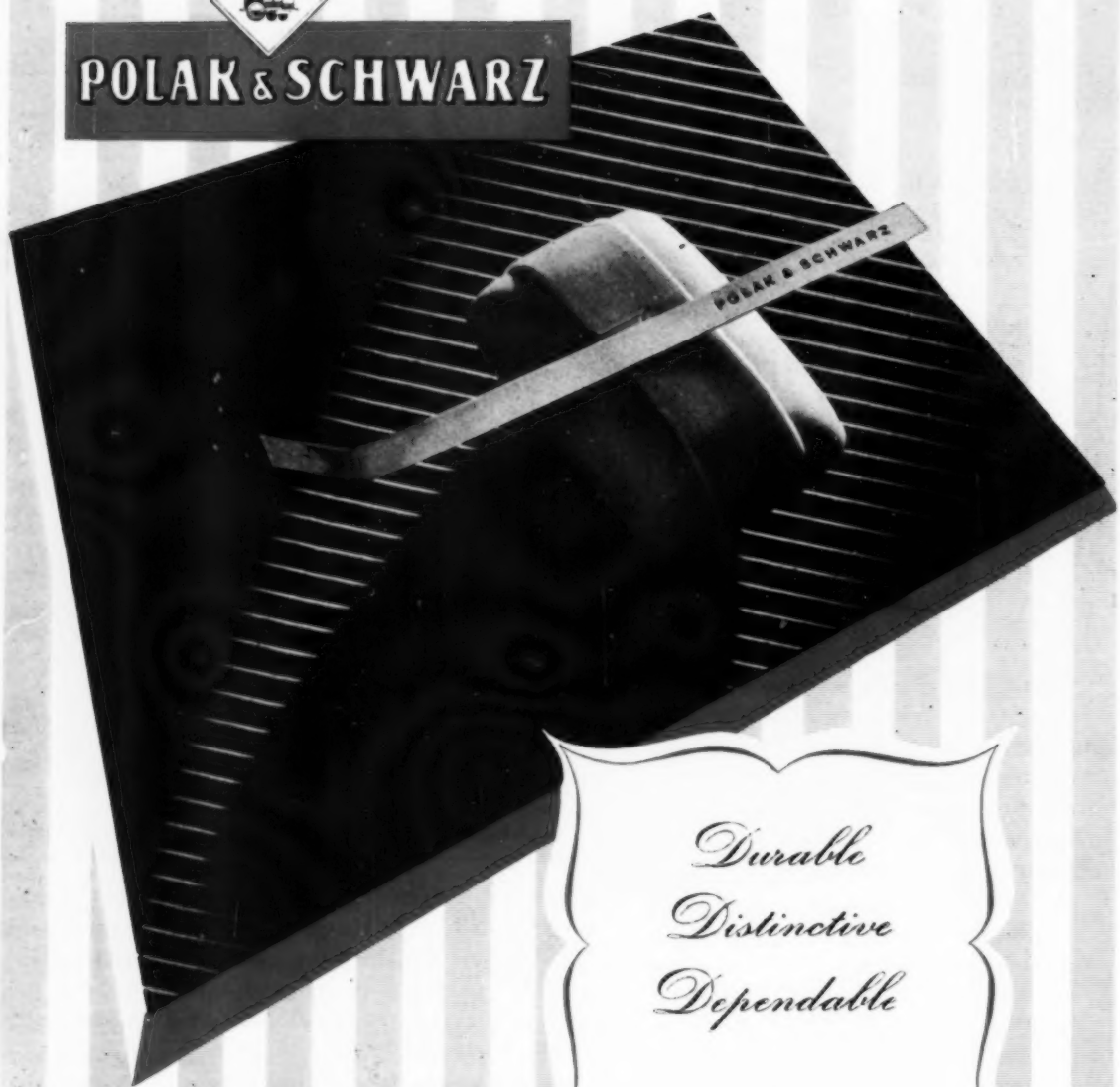

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1 to 2%	TERGITOL 4	TERGITOL P-28	TERGITOL P-28
2 to 5%	TERGITOL 4	TERGITOL 4	TERGITOL P-28 or 4
5 to 10%	TERGITOL 4	TERGITOL 08	TERGITOL 4
10 to 20%	TERGITOL EH	TERGITOL 08	TERGITOL 08
20 to 30%	TERGITOL 08	TERGITOL EH	TERGITOL EH or 08

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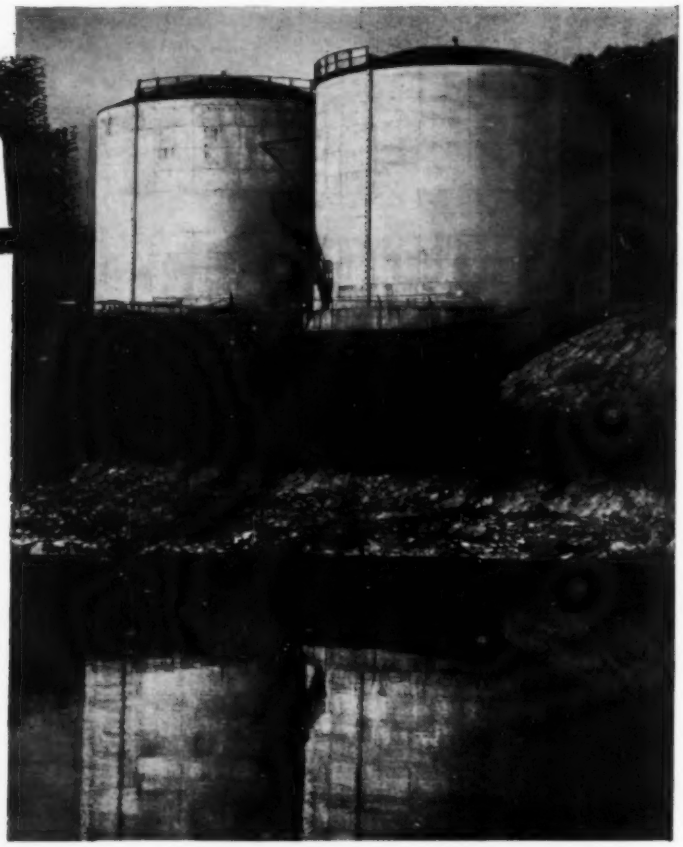

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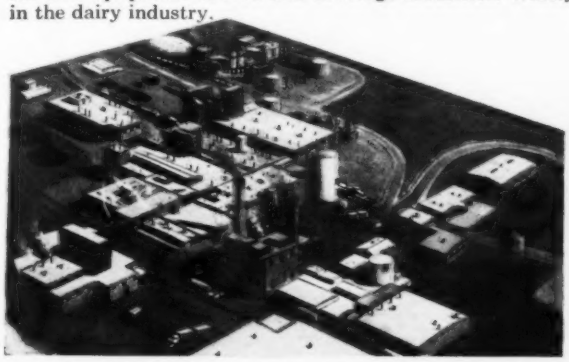

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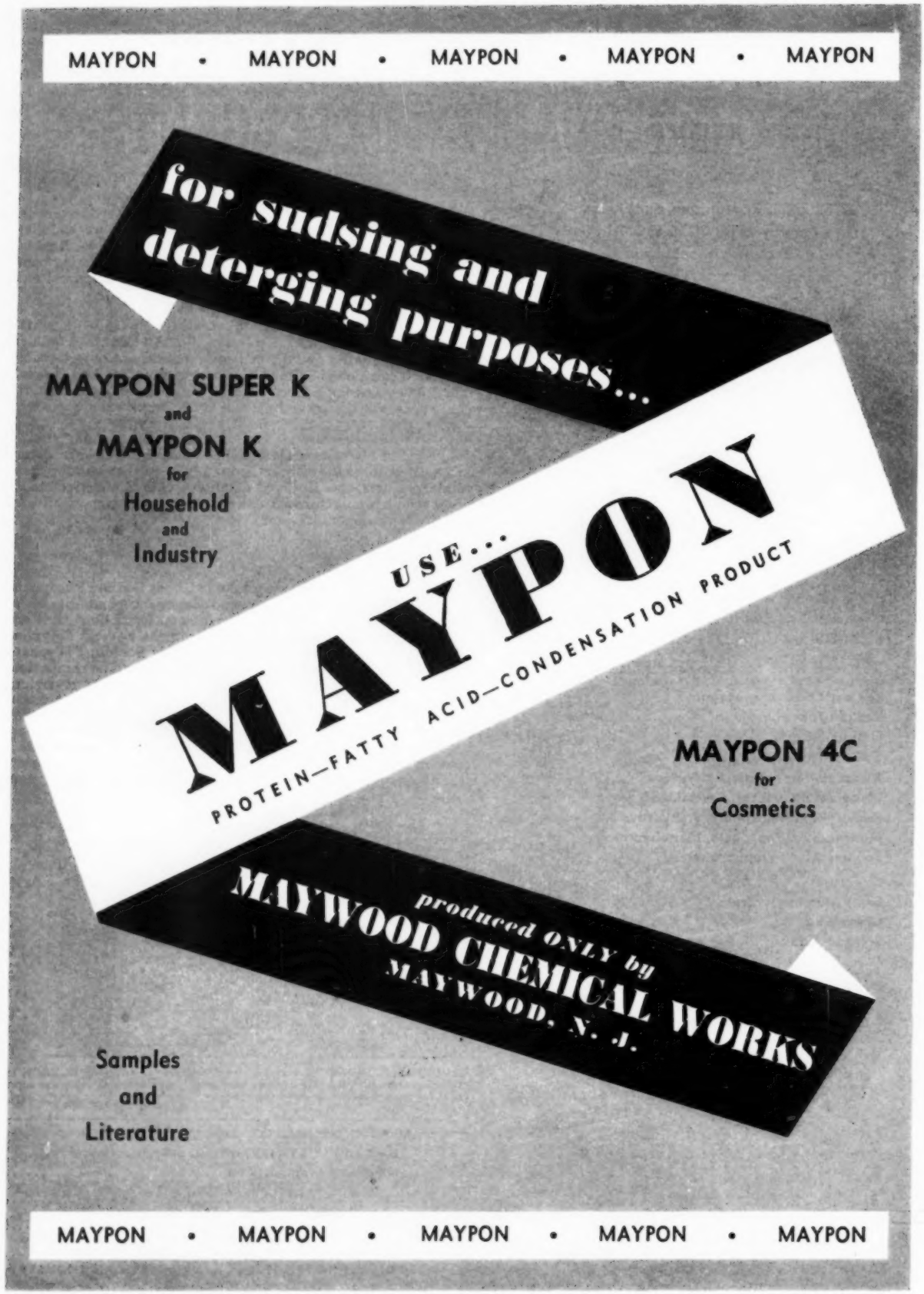
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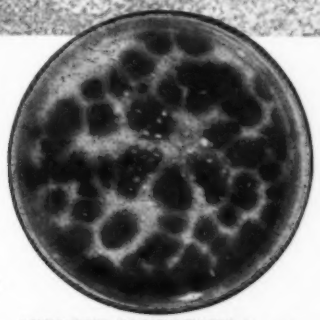

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Santophen 1 is compatible with commonly used soaps and synthetic detergents.

When properly formulated, Santophen 1 retains its bactericidal activity in commercial cleaners.

Santophen 1 controls mildew.

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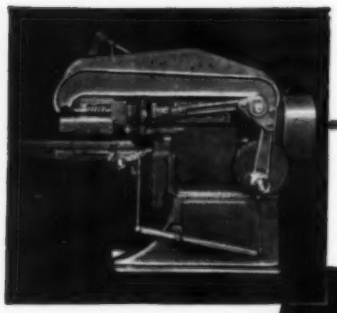

Type K Simplex Press

For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

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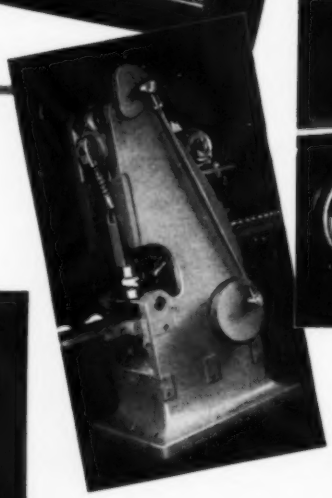

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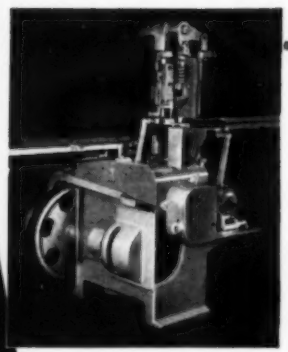
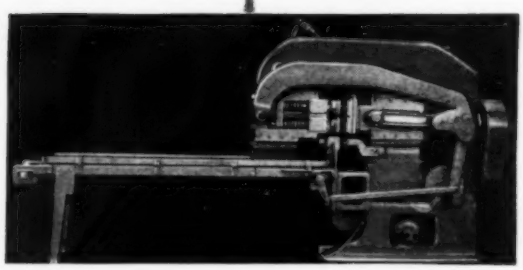


Type ET Press

For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

Type F Press

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.



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AS THE EDITOR SEES IT

TALLOW is more than double its price of a year ago. But that is only a small part of the picture as far as costs are concerned in the manufacture of soaps, cleansers, detergents, and allied products. Scarcities of alkalies, solvents, and a host of other important basic chemicals have brought and continue to bring higher costs to manufacturers. Smaller manufacturers, it would appear, are having a tougher time than their larger competitors, due probably in most part to relatively smaller purchasing histories. In addition, heavier demand for their finished product has forced them into the raw material markets for considerably increased tonnages.

Whereas early this year, most soap and detergent manufacturers were straining their gizzards to sell these products, they are now doing likewise to purchase enough raw materials to make them. The reversal in activities naturally has brought something of a squeeze. At the moment this is inconvenient, but not dangerous. At some future date, however, when the price trend turns the other way, as it must eventually, the manufacturer who is wallowing in orders today and figuring his costs on a psychic basis, stands to get it in the neck as usual.

For the ninety-ninth time in the last twenty-odd years, we once again urge smaller manufacturers to figure costs on replacement prices of raw materials. Larger operators seldom need be reminded of such procedure. They do it. Whether a reversal of price trends comes three months or three years hence, such operation now is just good business caution. For when raw materials go down and buyers start screaming for lower prices, competition invariably forces manufacturers to meet these lower figures irrespective of the higher costs of raw materials then in process or storage. It was ever thus. Among larger operators, reserve against inventory depreciation is added protection. Replacement cost pricing is the best safety measure for the small firm. Old man experience told us all this, and he ought to know!

CONSIDERABLE information on the classification and definition of soaps and other detergents has been kicked around among the general public and industrial consumers during recent years. This information has been of numerous and sundry types and of varying degrees of accuracy. Where it has been put out by manufacturers, the obvious purpose in the great majority of instances has been to convince an unknowing world that "Smello" or "Junko" is the most wonderful cleaning agent which ever came down the pike, and that anybody who fails to make a mad dash to the nearest grocery store to buy a box is soft in the head. Seldom if ever is the product defined as a soap or a synthetic or other detergent. Occasionally, the stigmatic inference, "Contains no soap," appears on package or in advertising. And the dear old public is pretty well confused, not to mention also a lot of industrial detergent buyers.

In this welter of confusion, a few outstanding exceptions come to mind at the moment, the efforts of the Household Finance Corp. in one of its buying guide booklets, the work of the National Sanitary Supply Association to clear the atmosphere, and an educational booklet put out by P & G a couple of years ago. There may be others which we do not know about. But, on the whole, most manufacturers are adding to the confusion. Maybe some prefer it that way, figuring the customer who knows the least is easiest to fool. Maybe some of them feel that it does not make much difference one way or the other. We do. We feel that in the interests of the reputable products, they should be tabbed and classified on the package or in advertising. And this does not mean formula revelation or anything akin to it, but just an honest descriptive word or two.

In the case of certain nationally-advertised products, we can anticipate objections. Where advertising has set a brand name apart from the crowd, the maker might not fancy his product being reclassified as just another detergent by his

own definition or otherwise. But, we do not feel that such would be the result of a standardized detergent nomenclature for general public use. Elimination of confusion must inevitably operate to the benefit of the reputable product and the public.

SHOULD the manufacturer tell the housewife on soap or detergent package how much of the stuff to use for a sinkful of dishes or a tub of clothes? Some of these recommendations, we have noted with interest, are inclined to be on the skimpy side. Frankly, we feel that they may be made more with a view of impressing the user of the product with its economy rather than as a real guide. At the same time, every manufacturer realizes that the average housewife invariably uses far more soap or detergent than is necessary to do the job. Maybe it has been a good thing for the soap industry over the years, especially in the profit column. But, it could be a factor in tempering manufacturers' recommendations.

On the whole, use of soap products has been left pretty much to the judgment of consumers for years. The fact that she dumped too much into the dishpan was never frowned upon by the industry. Now, some manufacturers are trying to tell the housewife how much to use. Their efforts may or may not be made with the best of intentions. But we doubt their success in either case. Mrs. McGuff is definitely allergic to reading label instructions.

WHAT might be interpreted as a more liberal view in the use of the word, "free," in advertising offers has come out of a recent Federal Trade Commission case. A book seller offered a "free" volume as an inducement to purchase a set of books, giving the buyer the privilege of cancelling the order after receipt and examination of the first volume of the set. A trial examiner for FTC recommended issuance of a cease and desist order against such use of "free." But, the Commission rejected the recommendation of its examiner.

Although the circumstances in this case may not represent a full reversal of FTC thinking, we feel that rejection of the examiner's recommendation marks a step toward a more liberal and practical attitude in the use of "free." The well-known FTC interpretation of January, 1948, stated in effect that any gift or gratuity requiring the purchase of other merchandise or performance of a service, in short with a string attached, is not "free" and such offers in interstate commerce violate the FTC Act.

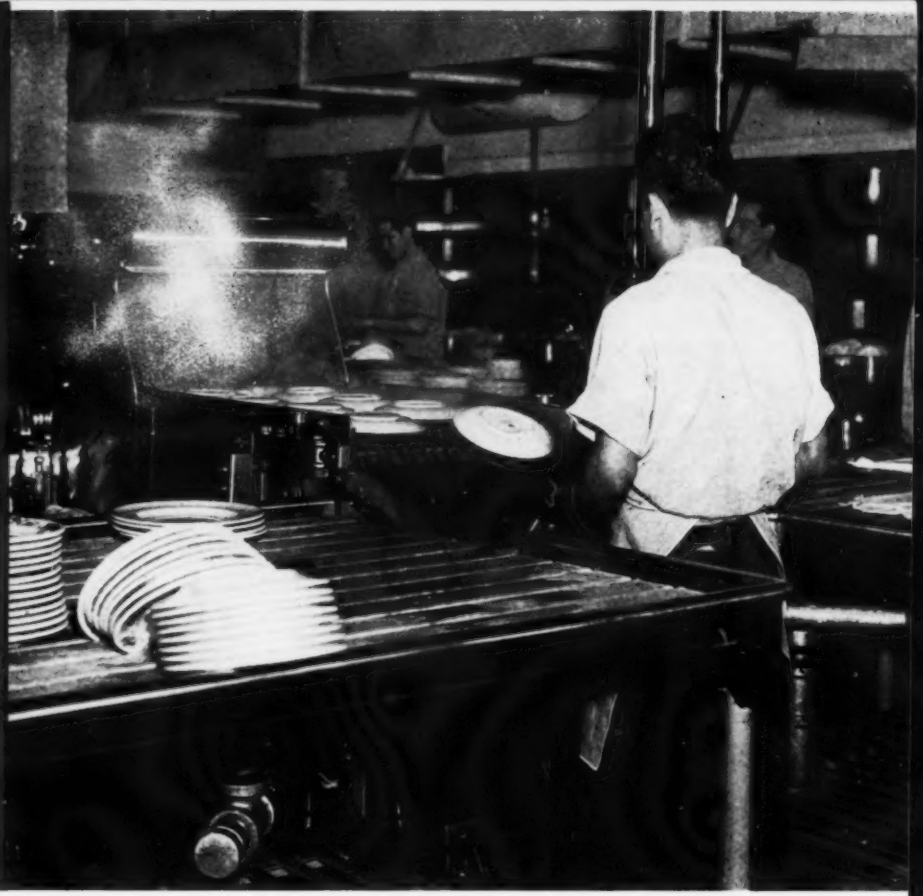
In discussing this recent FTC case, the National Better Business Bureau, which for some years has taken a more sensible and realistic view of the non-deceptive use of "free," emphasizes that the Commission itself points out that its 1948 ruling does not have the force of law and is only intended as a guide to industry. Could we assume from this that FTC is ceasing to frown on "free offers," honestly put and in no way misleading? As far as this applies to the traditional combination advertising offers by manufacturers of soaps, cleansers, and other household products,—"buy this one and get this free,"—a favorable clarification would be quite welcome.

IN A DESPERATE attempt to raise funds, the city of New York seems to be putting itself in a ridiculous position by attempting to collect sales tax on cartons for soap and other household products. A test case in the courts involving Colgate-Palmolive-Peet Co., supported by other firms and the Commerce and Industry Assn. of New York, is to get under way shortly. The attitude of the city's controller seems to be that grocers are the ultimate users of the soap cartons, since they break them open to get out the contents and eventually discard the cartons.

An earlier court decision ruling against a similar attempt by New York City to levy sales tax on the soap manufacturer as the ultimate consumer of the soap carton having failed, the city is taking this new approach to get in some additional revenue, regardless of how absurd it may be. The obvious danger of such brazen attempts to "hold-up" manufacturers of all sorts of commodities is that the idea may spread to other money hungry municipalities. While the outcome of the case in a court of law should be a foregone conclusion, the situation bears watching also by other soap product manufacturers who may some day find themselves up against a similar situation.

DETERGENTS for Mechanical DISHWASHING

By C. R. Tyler, Ph.D.



HIGH labor costs increasingly invite and justify investment in mechanical dishwashing machines where there are large quantities of dishes to be washed. This is particularly true for large restaurants and hotel dining rooms.

The detergent needed for use in dishwashing machines should be highly efficient and quick-acting. The requirements are not the same as for hand dishwashing, whether this is on a large or small scale. In machine dishwashing much higher temperatures are used than in hand dishwashing, and the washing itself is more rapid, enabling a quick turnover during peak periods when dishes are needed for re-use.

Formulation of a good product involves application of some knowledge of the basic principles of detergency. Although some products for this purpose are still composed largely of trisodium phosphate or a mixture of this with soda ash, and possibly a little caustic soda, the newer formulations are not. Although a simple mixture of alkaline salts would furnish a product at minimum cost, it would be a mistake for a manufacturer or compounder to make cost the first and only consideration. Dishwashing machines themselves are sufficiently expensive so that the cost of detergent, within reason, is a minor matter.

Without question, alkaline salts have their place as one type of ingredient in these products because high alkalinity is desirable. For example, a proposed Federal specification for a compound for use in machine dishwashers of the spray type gave a required initial pH range of 10.5-12.0.[1] This is a point of difference from hand dishwashing products, since a pH over 10.5 would be irritant and objectionable in contact with the skin. The same specification requires that this be buffered alkalinity, which means that it must be furnished by alkaline salts rather than by caustic soda. The high alkalinity of the latter is quickly depleted in use, while that of salts which furnish alkalinity by hydrolysis is not.

Types of Soil Encountered

THE practical aspects of dishwashing involve setting up a good general procedure which, once established, should require a minimum of supervision. The smooth glazed surface of porcelain and china makes it easy to scrape off the major portion of food residues. Such material should be removed as completely as possible before dishes are washed, both from the point of view of sanitation and for maximum efficiency of the detergent.

The soil remaining after scraping consists of fats and oils, sugar, starches and other carbohydrates, and proteins. Some of the carbohydrates and proteins are water-soluble and so present no problem. Others, particularly if partially dried on, become adherent and much more difficult to remove. Examples of particularly adhesive carbohydrates and proteins are dried residues from mashed potatoes and eggs, respectively. Immediate washing is therefore important. Following the scraping, preflushing under running warm water at about 100°F. is desirable, as this will remove some proteins coagulated at the high washing temperature. An oily film will still remain on the dishes, even after scraping and flushing, and this will hold with it minor amounts of other types of food particles.

The Cleaning Process

IN order for the detergent present in the wash liquid to be effective in emulsifying the oily film, it must lower the interfacial tension between oil and water. Commercial synthetic detergents and soap will do this. Soap, however, is not an ingredient of these products, for several reasons. First, precipitation by calcium and magnesium salts present as water hardness,

would be very troublesome; excess soap or water softeners could be used, but some streaking would be likely to occur during the rinsing. Also soap foams strongly and foaming lowers the efficiency of mechanical cleaning. It is therefore not practical to use soap in these formulations.

Although soap is not added as such, some is formed by reaction of hydrolysis alkali with fatty acids in the oily soil. At a high enough pH value, some saponification of fat may occur, also forming soap at the interface between oil and wash solution. Such soap, although extremely small in quantity, promotes emulsification because it is formed by reaction between ingredients in the two different phases.

Synthetic detergents of the alkyl aryl sulfonate type such as the "Nacconol" or "Santomerse" products promote emulsification, but the proportion of such a detergent must be kept low in order to avoid excess foaming—say to about 5 per cent of the total mixture. If 0.5 per cent of a detergent product containing 5 per cent of alkyl aryl sulfonate were used in the machine, this would give a concentration of 0.025 per cent of detergent itself in the wash liquid—not enough to cause interference from foaming. Five per cent of an alkyl aryl sulfonate product built with 60 per cent of sodium sulfate, would also be a maximum in terms of the proposed specification for content of inert ingredients. This is 3 per cent[1], which corresponds to the 60 per cent of sodium sulfate in "Nacconol NR".

Low-foaming *nonionic* detergents are of special value in stepping up the effectiveness of mechanical dishwashing detergents. Examples of these are "Sterox" and "Renex". Ten per cent or more of these could be incorporated, resulting in an increased overall detergent efficiency. Although nonionics are relatively expensive as compared with anion-active synthetic detergents, the properties of the former make them particularly well suited for the purpose under discussion. The liquid nonionic, "Glim", is achieving marked success for household dishwashing, but it foams too strongly to be suitable for mechanical dishwashing. Like "Glim", however, the nonfoaming nonionics are readily soluble, high in emulsifying and dispersing power, unaffected by water hardness, and free rinsing without streaking. They are not ordinarily "built" with sodium sulfate or other inorganic salts, which accounts in part for their higher cost in comparison with commercial anion-active detergents. For example, "Glim" is over 80 per cent active detergent ingredient.

Preflushing hose with trigger spray nozzle removes heavy excess soil from dishes before washing.

Another type of ingredient which promotes oil removal does so by displacing the oily film, stripping it off and leaving the aqueous phase in its place. This type of agent belongs to the class of molecularly dehydrated phosphates. Among them are tetrasodium pyrophosphate, sodium tripolyphosphate, sodium hexametaphosphate ("Calgon"), and sodium tetraphosphate ("Quadrafos"). These polyphosphates have been shown to possess extraordinary wetting power in displacing oil from oil-wet fabric,[2] although they are not surface-active in the sense of lowering interfacial tension against oil. The polyphosphate agents appear to function in part by virtue of their large negatively charged ions. It is believed that they remove an oily layer from a surface by displacement and preferential sorption on that surface. Cotton fabric, glass, and porcelain are all polar in character, so that they can be expected to behave alike in these general sorptive characteristics.

Although the molecularly dehydrated phosphates are also water softeners, that is a separate property unrelated to wetting power. The experiments showing their high wetting power for oil-wet fabric were carried out in distilled water.

Once the soil has been displaced, it must not be allowed to redeposit. The detergent solution must have the property of keeping oil droplets emulsified and solid particles dispersed in the wash liquid. The synthetic detergent itself is the agent high in dispersing power, rather than an alkaline salt or a polyphosphate. High dispersing power of the deter-

gent solution is usually important in the cleaning process.

Conditions of Use

SINGLE-TANK dishwashing machines pump solution through spray nozzles down over the dishes. They are then sprayed with a hot-water rinse. The rinse water may flow into the wash tank and dilute the wash liquid, or preferably be drawn off from the machine through the waste pipe. In a two-tank machine the second tank is used for the rinse.

Conditions of time, temperature, and detergent concentration may vary somewhat. As little as 20 seconds and as much as two minutes have been used with success. High temperatures are desirable, 130-140°F. for washing and 160°F. or higher for rinsing. The Navy Department Bureau of Ships Ad Interim Specification 51DS issued March 15, 1943, required a temperature of 130°F. for the wash spray, 175°F. for the first rinse, and 180°F. for the final rinse. These high temperatures are for efficiency and for sanitation. The high rinse temperature used for 2-3 minutes kills many common types of bacteria. If rinsing is complete, so that no film or streaks are left, bacterial contamination should be low.

Many local health authorities require special sanitizing rinses to meet definite standards of low bacterial counts on the washed dishes, Chlorine compounds have been used, also highly bactericidal quaternary ammonium compounds.

One difficulty which has been encountered with the use of quaternaries is that they are sorbed by glass and porcelain. The dishes then show water break instead of draining freely. Also, even though no soap is present in the original detergent mixture, enough may be formed by reaction of alkali with fatty acids to inactivate the small amount of quaternary used for sanitizing.[3] Soap and other anion-active detergents precipitate quaternary compounds and other cation-active agents.

A porcelain surface which has sorbed quaternary ammonium salts, shows a contact angle with water of 90-110°. Water collects on such a surface in droplets which dry slowly and tend to leave stains. Dishes which have been sanitized by such an agent can be rinsed clean with a very dilute solution of anion-active or nonionic agent.

To go back to the washing process, another question to be considered is the optimum concentration of detergent. The Navy Department Specification recommended use of 1 pound of detergent for each 25 gallons of wash-tank capacity. This is approximately a 0.5 per cent solution. Half of this amount was to be added every 20 minutes during washing of table ware. In other words, an effective detergent concentration must be maintained. Some formulations are more efficient than others, so that the concentration needed will vary. The general range should be from about 0.2 per cent of a highly efficient product, to about 0.5 per cent of a less efficient one. In some cases at least, an original price differential can be overcome in this way.

Specific Formulations

AMONG the alkaline salts used in compounding detergents for mechanical dishwashing, sodium metasilicate has proved especially satisfactory.[4] It reduces or inhibits corrosion of equipment. It is also effective in removing protein soil.[5]

A fairly high proportion of polyphosphate is desirable, particularly if the product is intended for use in very hard water such as 300 p.p.m. Besides its function in displacing oil, it will help prevent precipitation of calcium salts.

At least some synthetic detergent is desirable. The kind and amount to be used depends on various considerations, as discussed previously. Final formulation of a new product should be determined experimentally and related to conditions of use as well as to desired maximum cost. In general, the better the performance, the higher the cost will be.

As to form, briquets are rather popular, as simple to use. Mechanical automatic solutionizers have been designed to dissolve the detergent and supply a solution at a fixed concentration to the machine. Powders are common, as they are the simplest to manufacture and are readily measured after the exact amount to be used has been determined by the operator.

Analysis of a few present-day commercial detergents for mechanical dishwashing shows that a good deal of variation exists. Approximate compositions are as follows, including pH values when these have been reported:

	%
1. Trisodium phosphate, anhydrous	60
Tetrasodium pyrophosphate	20
Water	20
Trace of fluorescent dye pH of 1% solution 11.3	
2. Trisodium phosphate	36
Tetrasodium pyrophosphate	36
Sodium silicate pentahydrate	19
Soda ash	9
3. Trisodium phosphate anhydrous	20

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Cleanliness Institute photo

WHILE shampoos have been familiar items for generations, it appears that the last decade has marked their greatest growth in public favor for hair and scalp cleansing. This is reflected in the phenomenal increase in shampoo purchases during recent years. According to one report, (1) shampoo sales have risen by 658 per cent since 1939. One estimate (2) puts shampoo sales volume at 50 million dollars.

Most shampoos are sold in the form of clear liquids, liquid creams or paste creams. Some powdered shampoos are marketed, but their popularity is greater abroad and their sales in this country relatively small. Quite surprising is the fact that large numbers of people still use cake soap for shampooing the hair. This was brought out in surveys conducted by two leading women's magazines. Thus in a s tudy (3) of the readers of *Woman's Home Companion*, it was found that 52 per cent use a liquid shampoo, 41 per cent use a cream shampoo, while seven per cent use regular cake soap. These figures, including those on the use of cake soap, are very much in line with those reported more recently in the *Good Housekeeping* consumer panel study. (4)

The latter report also provides a good index of what the consumer expects in a shampoo, besides a good cleaning action. The desired features, in decreasing order of importance, call for a product that: (a) rinses out easily, (b) works well in hard water, (c) gives hair gloss, (d) removes dandruff well, (e) leaves hair manageable, (f) does not dry hair, and (g) is easy to apply.

It is interesting to note the close agreement between consumer requirements and the standards for shampoos set up by the experts. Jannaway, (5) for example, has said that shampoos should be efficient but mild detergents, free of harmful or irritant effect. They should be readily soluble in water and easily rinsed out of the hair, even in hard water districts. After shampooing, the scalp should be fresh and clean, and the hair soft, lustrous and free from any tendency to show matting, stickiness, brittleness or coarseness. These and other requisites are also brought out by Schwartz and Perry, (6) who note that a shampoo must be psychologically satisfying to the customer with regard to color, odor, thickness, uniformity, degree of clarity or opacity, and lathering power.

Liquid products, the most important class of shampoos, may be based on soaps, synthetic detergents or mixtures of such agents, plus various modifying materials to provide the properties desired by the consumer. As remarked by one authority, (5) the question of soap versus synthetic detergents in shampoos is still a controversial one. Both, says he, have inherent defects that need to be carefully offset when devising and perfecting a shampoo formula.

The buying public, however, seems to have its own views concerning

SHAMPOOS...

A study of trends in demand and of the better selling types being marketed today

By Milton A. Lesser

(Part I)

the relative merits of soaps or synthetics in liquid shampoos. This is reflected in the observation (6) that even though shampoos form one of the major outlets for synthetic surface active agents, the soap-type shampoo is still the most widly used. Similarly indicative is the view, (7), recently expressed editorially in *Soap and Sanitary Chemicals*, that the older soap-type product has been returning to greater popularity. This is attributed to two things. First are the shortcomings of some of the synthetics, especially with respect to scalp drying effect. Second is the end of the hard water problem for liquid soap shampoo. With the solution of this problem, soap is held by some authorities to provide a better all-around shampoo; one that is more to the liking of the average woman than a product based on a synthetic.

It has also been estimated, notes this editorial, that soap has come back to the point where 60 per cent of today's market is liquid soap and 40 per cent is represented by the synthetics. Moreover, of soap's share of the market, over 80 per cent is said to consist of coconut oil potash soap, averaging about 20 per cent anhydrous soap.

This, of course, is in line with the statement (6) that the usual soap shampoo is a clear viscous solution containing about 20 per cent of potash soap. However, it should be noted that the anhydrous soap content may range from as low as 10 per cent to as high as 30 per cent or more, the latter being termed frequently as concentrated shampoos or the like. Shampoos of this class may be prepared by one of three basic methods: (a) by saponification of oils, (b) by reacting fatty acids with alkali, and (c) by diluting a prepared concentrated soap base, (5, 8)

Current sales of shampoos of all kinds in the United States exceed $50,000,000 per year. Ten years ago, the shampoo market in America was less than fifteen million dollars per year. More than a 200% increase in sales since 1940! Market analysts lay this spectacular sales growth to a combination of factors, chief of which are the over-all higher level of family incomes attended by wider excursions into luxury markets, and increased expenditures in all forms of advertising by shampoo manufacturers.

Because it provides the copious lather which the public regards as a measure of detergency and as an index of a good product, coconut oil is the most important material used in making liquid soap shampoos. With its high lauric acid content, a straight coconut oil soap gives the desired quick and copious foam. However, such a soap has the reputation of being somewhat irritating to the skin. While Jannaway (5) feels that this tendency to "bite" has been somewhat overemphasized, Schwartz and Perry (6) observe that the irritating effect has been traced, with a high degree of certainty, to the presence of certain fatty acids. In this connection they call attention to the recent availability of fractionated coconut oil fatty acids from which these supposedly irritating components have been eliminated.

They also note that the usual way of improving the mildness of coconut oil soap for shampoo manufacture is to modify it with olive oil, other high oleic acid oils, or castor oil. However, as noted by Thomssen and McCutcheon (9) such combinations form a heavier, but not as easy-rinsing lather as the straight coconut oil types.

Pointing out that coconut oil and castor oil combinations can be extremely satisfactory, one English authority (5) states that the use of from five to 20 per cent of castor oil soap is valuable for increasing the solubility of the finished shampoo, reducing hydrolysis, increasing the emollient effect, and facilitating rinsing. Referring to the use of olive oil soap, he observed that it gives both good and mild cleansing action of the hair and scalp.

In addition to coconut, castor and olive oils, the shampoo formulator may make use of other vegetable oils. These include sesame, cottonseed, soya, corn and peanut. During the last few years, an oil obtained from coffee beans has also found its way into the production of shampoos. Considering today's coffee prices, one must hasten to add that the oil is derived from waste beans

which cannot be used for beverage purposes.

CAUSTIC potash alone is most generally used as the saponifying alkali in making soap shampoos. However, combinations of caustic potash and caustic soda are sometimes of advantage in certain formulas. The several reasons advanced for including caustic soda have been listed, without comment, by Auch, (10) as follows: (a) the soda soap keeps the solution clearer after filtration, (b) it tends to exert a retarding effect on the hydrolysis of potash soaps, (c) it retards the development of rancidity, and (d) it seems to improve lathering properties.

Besides caustic soda and potash, triethanolamine is sometimes used as the saponifying agent. (11) In order to improve certain properties of the soap, part of the potash may be replaced by this or other amines.

Various additives are used in the liquid soap shampoos in order to impart certain desirable characteristics, particularly body and clarity. As remarked by Harris, (12) viscous solutions suggest high concentration and make for ease of handling a liquid. Among the agents which may prove suitable for thickening shampoos, he rates the following as "good" for this purpose: methyl cellulose, hydroxy ethyl cellulose, polyvinyl alcohol and Irish moss. Other agents which may be useful are: carboxy methylcellulose, sodium alginate and various vegetable gums, like arabic or tragacanth.

Another worker (13) states that the thickening agents commonly used in liquid soap shampoos are potassium chloride, alcohol, glycerine, glycols and various proprietary products. He points out that in most cases, the presence of such thickeners causes a reduction in detergency, foaming or both. In his opinion, it is better to obtain increased viscosity through the use of properly selected fatty components. Thus castor, olive, or oleic acid soaps tend to increase viscosity. The use of caustic soda as part of the alkali is also somewhat helpful in this direction.

Turbidity is perhaps the most vexing problem of shampoo production, and many methods and materials have been tried in efforts to attain and retain clarity. These have been well summarized in Kranich's (14) observations that through proper formulation, water purification, mechanical refrigeration, destearinization, ageing, specialized filtration, and the use of various chemical additives, the liquid soap shampoo manufacturer has solved the problem of clarity maintenance with a considerable degree of success.

Authorities generally agree that the use of high grade fatty ingredients thoroughly saponified to yield easily dissolved soaps is a prime requisite in preventing turbidity. Also of major importance is the use of distilled or at least softened water. Ageing for up to three weeks to permit settling, at gradually reduced temperatures, is followed by filtration. Filter aids are often used; fresh alumina gel (fresh aluminum hydroxide) being frequently recommended. (13, 15)

In addition to these physical methods various materials are added to the liquid soap to help maintain clarity. (8) Alcohol and glycerine have long been used for this purpose. According to Jannaway, (5) potassium carbonate is frequently added to aid in maintaining clarity.

During recent years, the addition of sequestering agents has become a rather well established procedure for maintaining the clarity of liquid shampoos. Compounds like tetrasodium or tetrapotassium pyrophosphate and sodium hexametaphosphate are often used because they inhibit the precipitation of calcium and magnesium soaps in hard water. Boyle (11) notes that such salts are sometimes added to products that have already been filtered to guard against the later development of this trouble. This, of course, refers to the hair-dulling, insoluble soaps that might precipitate during shampooing in hard water areas.

Pertinent, too, is Hilfer's (16) observation that these phosphates have contributed toward the production of shampoos with good appearance and long shelf life. In the editorial previously cited, it is pointed out that the use of sequestering agents to lick the hard water problem is a potent factor in the returning popularity of soap shampoos.

MORE recently, attention has been focussed on the organic sequestering agents. (2, 8) Especially noteworthy are the poly amino carboxylic acids and their salts. Such materials are available under such trade names as the "Sequestrenes" (Alrose Chemical Co., Providence, R. I.), the "Nullapons" (General Dyestuffs Corp., New York City), the "Versenes" (Bersworth Chemical Co., Framingham, Mass.), "Modern Clarifyer" (John B. Jenkins Co., Chicago, Ill.), "Perma Kleer-40" (Refined Products, Lyndhurst, N. J.), and others.

Kranich's (14) studies of the value of these agents are noteworthy. The results of his tests demonstrated that these organic sequestering agents are "remarkably successful" in stabilizing liquid soaps against cloud formation. The best results were obtained by adding a solution of the agent to a properly formulated, aged, refrigerated and filtered liquid soap product. In his opinion, these agents may be used to overcome soap curd formation, which is perhaps the sole remaining major deficiency of liquid soap shampoos.

PERFUME and color are important considerations in a shampoo. The perfume of a shampoo may serve to cover the odor of certain raw materials or the inherent odor of the soap itself. It may also serve as a distinctive touch to heighten identification and sales. It is rather interesting to note, however, that there does not seem to be any marked agreement, either among the experts or the manufacturers, as to what constitutes a typical shampoo odor. The industrial perfume manufacturer can be most helpful in selecting a compound that will not only provide the desired odor, but which will also be stable in the shampoo and not cause clouding.

A somewhat similar situation prevails with regard to color, but in the main a pale amber seems to be the preferred tint. Occasionally one still sees the old fashioned yellow-green of fluorescein, but this is usually limited to the cheaper brands of shampoo.

As remarked by one authority,

(4) rancidity should not normally be encountered in a shampoo. However, if there is any doubt with regard to such changes, he advises the use of agents like hydroquinone, *beta*-naphthol, thymol, benzoic acid derivatives and the like, in very small quantities.

As most experienced soap makers know, the proportions given in shampoo formulas are not absolute because the concentration of alkali varies slightly from batch to batch and the saponification value of the fatty ingredients will also vary. Hence, all formulas require adjustment, as required, not only during experimentation, but also during commercial production.

As previously mentioned, liquid shampoos may be made by one of three methods. In the first, based on the use of whole oils, the liquid soap is made by either the cold or semi-boiled process. After saponification, the concentration is adjusted as required and the soap solution is left for as long a period as is practicable so that insoluble material may settle out. (11)

Newest wrinkle in shampoos is the aerosol "bomb" type made and marketed by Helene Curtis, Inc., Chicago, under the trade name "Shampoo Whip." "Ready lathered" shampoo is said to contain lanolin and retails for $1.

MANY formulas for making shampoos from vegetable oils are provided in the technical literature. One of the simplest is listed by Kalish (17) as follows:

	Parts
Coconut oil	16
Potassium hydroxide	4
Water	80

;

More elaborate but probably much more typical is the following cold-process coconut oil shampoo, as given by Thomssen and McCutcheon: 9)

	Per Cent
Olive oil	4.00
Coconut oil	20.00
Caustic potash (85%)	4.10
Caustic soda (95%)	1.87
Alcohol	15.00
Distilled water	54.03
Perfume	1.00

Dissolve the alkalis in one-third of the water; melt the oils and let stand until lukewarm and pour in the alkalis, with stirring, in a thin stream. Add the perfume, mixed with the alcohol, and continue stirring until the liquid becomes a light amber color. Allow to stand overnight and add the rest of the water. Age, chill to 32°F. and filter.

A well rounded liquid shampoo, given by a British authority, (5) calls for:

	Parts
Coconut oil	14.0
Olive oil	3.0
Castor oil	3.0
Caustic potash (stick)	4.7
Glycerine	2.0
Alcohol	4.0
Sodium hexametaphosphate	1.0
Perfume compound	0.4
Water	68.0

Dissolve the potash in nine parts of water and allow to stand for a few hours. The clear lye is then run slowly and carefully into a steam-jacketed kettle containing the previously melted oils. After stirring until the reaction seems complete, the kettle is covered and allowed to stand for an hour. Control tests are run and, after making any needed corrections with alkali or oil, the remaining portion of the charge is added, slowly and gradually; stirring speed being gradually reduced as the soap gets thinner. After cooling in the kettle the soap is drawn off into vats where it is allowed to settle and become clear.

Many other variations could be cited. Typical is the following formula (15) for a heavy shampoo made without coconut oil:

	Parts
Olive oil	88
Corn oil	22
Alcohol	92
Glycerine	18
Potash lye (39°Be.)	33

FATTY acids are used in the second general method for making liquid soap shampoos. With the use of fatty acids, saponification takes place more rapidly, greater uniformity is possible and there is a larger soap yield. (8) A liquid shampoo (18) of this sort can be prepared from:

	Parts
Coconut oil fatty acid	15.0
Castor oil fatty acids	5.0
Potassium hydroxide	3.5
Triethanolamine	6.0
Purified talc	3.0
Water, to make	100.0

Dissolve the caustic potash and triethanolamine in 40 parts of water and warm to 60°C. and add the previously melted fatty acids. Continue heating until the mixture becomes clear. Add the rest of the water and check for excess alkali or fat; and make adjustments if necessary. Allow to stand for a week or longer, add the talc and filter until brilliantly clear.

It has been suggested (13) that,

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DETERGENTS for Printers Type

By Paul I. Smith

GOOD printing cannot be done with dirty type and engravings. The presence of particles of hard gritty dust and dried ink on the printing forms may cause serious damage to both type and engravings when proofs are taken, as impressions tend to grind the particles of dust into the face of the soft metal. Thorough cleaning pays a handsome dividend by ensuring that the type prints crisp and clear and that reproductions of engravings are free from imperfections attributable to the presence of dirt.

For a number of years printers have made use of solvents, such as gasoline, benzol, mixtures of benzol and acetone and kerosene, also aqueous solutions of soap and strong lyes made by dissolving sodium carbonate or caustic soda in water. It has long been realized that none of these cleaning agents are one hundred per cent satisfactory. During the last two years attention has been given to the possibilities of using some of the sodium higher alkyl sulphates, and those printers who have used them for cleaning purposes rate them higher than the more conventional type of cleansing agents. There is undoubtedly a profitable and sizable market for synthetic detergents in the printing trades, but the requirements are fairly exacting and may be summarized as follows:

1. The detergent must dissolve freely in water of any degree of hardness to give clear, chemically neutral solutions, capable of effecting substantial reductions of surface tension and interfacial tension.
2. The aqueous solution must not be colored, or at least only just tinted.
3. The detergent must not hydrolyse in water and it needs to be stable over a wide pH range.
4. Low concentrations, such as two to three ounces of detergent per gallon of water, should be effective as cleaners.
5. The detergent and its solutions should be non-inflammable, nontoxic and possess a very low volatility.
6. The cleansing solution should leave type and engraving with a scum-free, polished surface. This is particularly important in the case of new type, i. e., fresh type from the caster, which has to be distributed into cases.

English printers are now making use of "Teepol," which is the brand name for a mixture of sodium higher alkyl sulphates made by Shell Chemicals, Ltd. This surface active agent is now being manufactured in Britain on a large scale and is, therefore, in free and unrestricted supply. It is available in the form of clear, amber colored liquid—a fine creamy-white powder of double strength, and in paste form, all of which dissolve freely to form colorless solutions in cold or warm water.

Cleaning Is Simple

CLEANING of type and engravings with a synthetic detergent is fairly simple. A solution of the correct strength, say three ounces to the gallon of water, is made up and applied to the type of engravings with a soft animal brush or clean, soft rags soaked in the detergent. All surface dirt and dried ink is softened and removed, taking care to prevent the grit and softened ink from seeping down between the letters and so clogging the form. Afterwards the type is rinsed with cold or lukewarm water and thoroughly dried with clean dry rags. Where the ink has hardened and proves very obstinate to remove, the use of printer's ley or lye is usually recommended. One formula which has been

found serviceable calls for one pound of caustic soda dissolved in two gallons of water, to which one-quarter pound of soft soap has been added. An improvement on this is to add two pounds of sodium carbonate (anhydrous) to one gallon of water containing four ounces of the synthetic detergent, stirring well to ensure thorough mixing. This solution will be found to be very effective and it has the added advantage of being free from insoluble calcium and magnesium soaps.

Aqueous solutions of sodium alkyl sulphates can be used before or after solvent cleaning. This is considered to be necessary only where dirty type or engravings have been stored away for years. Ink can be one of the most troublesome substances to remove if the drying oil constituent has become completely polymerized through the action of light or heat in the presence of driers. In extreme cases it may even be necessary to use solvents followed by synthetic detergent and strong alkaline solutions.

The printer is a practical man, working to a close price margin and he is naturally concerned with the economics of any so-called "new fangled" cleaning methods. The use of one of the efficient anionic detergents offers several practical advantages which make possible worthwhile savings in time of cleaning and material. To summarize some of the more important of these advantages:

1. The sodium higher alkyl sulphates possess outstanding wetting, penetrating and dispersing properties. Very small quantities of good proprietary products are able to effect reductions of surface tension by as much as 30 dynes per cm. In addition, small concentrations of the agent can achieve remarkable reductions of interfacial tension, as much as 36.0 dynes per cm. at a concentration of 0.2 per cent.

All this adds up to an ability of the detergent to work on the dirt and ink as soon as contact between the liquid and solid takes place. Cleaning therefore becomes easier and quicker than could reasonably be expected using soap and water.

2. The synthetic detergent dissolves equally well in hard or soft water and there is no objectionable clinging scum of insoluble calcium and magnesium salts. Of importance to the printer is the fact that a well balanced synthetic dissolves readily in cold water, whereas, of course, soap is not so easy to pass into solution and requires hot water and a good deal of stirring.

3. The proper use of aqueous solutions of sodium higher alkyl sulphates can usually dispense with the employment of alkalies unless the greater difficulty is experienced in softening dried ink. As solutions of well chosen synthetic detergents are neutral in reaction, having a pH less than eight, they are perfectly safe to use in contact with wood and there is no objectionable swelling such as often occurs when strong alkaline liquids are utilized.

4. Solutions made up of selected anionic detergents are kind to the hands and do not possess the drastic softening action of harsh alkalies; moreover, the synthetics are without any injurious effects on clothes or footwear.

5. A simple rinse lasting only a few minutes is sufficient to remove the synthetic detergent from the surface of the metal, whereas with lye there is a necessity to wash the type in running water for long periods. Apart from the substantial saving in time, the use of a synthetic reduces the danger of the warping or swelling of wooden furniture or reglets to an absolute minimum.

6. Being neutral, the anionic surface active agents suitable for cleansing type are without any possible detrimental effect on type metal, half tones, line blocks, etc. The surface of the cleaned metal is left "new looking" and well able to leave a crisp and sharp impression on paper. The continued use of strong lyes has a harmful effect on the non-ferrous metals and tends to leave them dull and pitted. Some of the common solvents, particularly kerosene, contain small quantities of mineral acids which exercise a slow but corrosive effect on the metal. Where type is broken up directly after use there is, of course, no need to take such great pains in cleaning the metal, but it often happens that forms are locked up for several years before running a new edition and here there is an urgent need to insure that the type remains in excellent condition. A great deal of capital can be locked up in type.

7. Solvent cleaners are costly to use because they are so wasteful, whereas aqueous solutions of sodium alkyl sulphates are very inexpensive in the concentrations recommended

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GPO Detergents Report

An expanding market for synthetic detergents in the printing field is discussed in a recently issued report, entitled "Detergents for the Printer." The report was prepared jointly by the Government Printing Office, Washington, D. C., and the trade association, Printing Industry of America, Inc. It points out that "Although the number of applications of wetting agents has increased greatly in the past few years, it is believed their potentialities in the graphic arts have not yet been fully explored and there is reason to hope for more extensive investigations in the near future.

The report reviews developments in the use of washup compounds by printers. Early utilization of volatile solvents is covered and consideration is given to alkaline cleaning compounds which have gradually replaced the solvents.

To remove dried ink from type forms a strong caustic soda or lye was used extensively in the past until compounds were developed containing trisodium phosphate, soda ash and a small portion of caustic soda. Now, in another development, these milder detergents have been replaced in the Government Printing Office by solutions of the soluble silicates, such as sodium metasilicate and sodium sequisilicate, which are not injurious to the skin and have no objectionable odor. Formulas for mixing these newer detergents are given in the report, which is available from Printing Industry of America, Inc., 719 15th St., N.W., Washington 5, D. C.

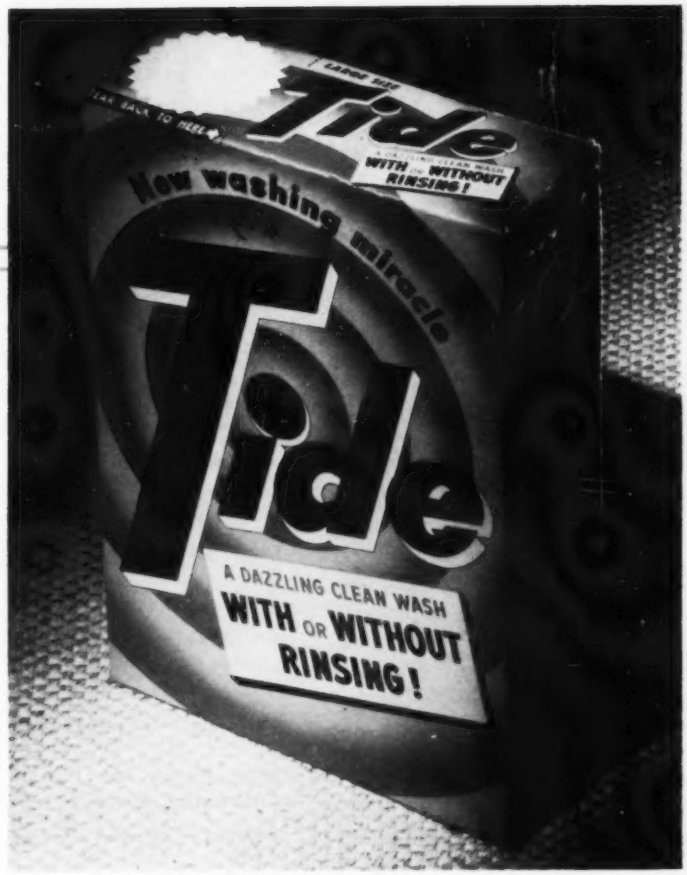
WHAT'S

New package for "Fab" (left), latest of the synthetic detergents stressing the "no-rinse" feature. "Fab" is heavy duty detergent made by Colgate-Palmolive-Peet Co., Jersey City, N. J. Carton design has been changed to emphasize the "less-work" aspect of "no-rinse."

New packaging for "pHisoderm," liquid synthetic detergent for cleansing skin, made by Winthrop-Stearns, Inc., New York. The material is now packaged in polyethylene squeezable plastic bottle that is non-breakable. It is also recommended for shampooing. Comes in two-ounce traveling size package; three ounce special dispenser and seven and 12 ounce refill sizes. Also in 1-gal. bottles.

New Yardley of London, New York, gift set for men combines shaving bowl and shaving lotion. Both are scented with fragrance of English lavender and come packaged in special Christmas gift box in black, gray and gold. The set retails for $2.50.

NEW?



"Tide," heavy duty synthetic detergent made by Procter & Gamble Co., Cincinnati, now appears in a revised package, which stresses the "no-rinse" idea. Changes in the package include a horizontal panel, imposed on the bull's eye, directly under the giant blue "Tide" lettering. This panel reads, "A dazzling clean wash with or without rinsing!" On the back of the package, two paragraphs have been added, giving directions on how to wash without rinsing and with approved rinsing technique.

Improved packaging for "Sta-Flo Liquid Starch" made by A. E. Staley Manufacturing Co., Decatur, Ill., includes the addition of a new, coated metal closure in two colors. Top of closure is in red and white and performs the double function of reminding the housewife to "shake well" before using and also provides a convenient space for price marking by the retail store operator. Coated metal closure and "Duraglas" bottle are both manufactured by Owens-Illinois Glass Co., Toledo.

Sulfonation of Alkyl

THE purpose of this paper is to present some of the more important factors encountered in the sulfonation of alkyl aryl hydrocarbons as a basis for discussion and further study by those interested in the expanding field of alkyl aryl sulfonate detergents.

The Sharples-Continental Corporation, who supply only the alkyl aryl hydrocarbon and do not sulfonate commercially, would gladly make available further specific information to those interested in sulfonation and will extend the facilities of their Customer Service Laboratory and Pilot Plant to assist in customer sulfonation problems.

The sulfonation of alkyl aryl hydrocarbons has been practiced by a very few large firms for the past fifteen to twenty years. This early production was primarily of surface-active agents for industrial applications. However, notable growth has taken place within the past five years when the alkyl aryl sulfonates began finding extensive use in household package products. The opening up of the household field to alkyl aryl sulfonates was responsible for at least two major effects. First, the exacting quality demands of the household field necessitated refinement in quality of both the alkyl aryl hydrocarbons and the sulfonation process as well. Secondly, with the advent of the petroleum companies into the production and sale of alkyl aryl hydrocarbons there became available an ample supply of alkyl aryl hydrocarbon to all manufacturers. The alkyl aryl sulfonate manufacture has now been undertaken by many smaller firms. This operation was particularly attractive to those firms having suitable existing sulfonation equipment, which in many cases had been used for sulfonation of vegetable and animal oils.

Definition of Terms

THE term "alky aryl" has been used widely, although somewhat loosely, to designate those sulfonatable hydrocarbons which contain an aromatic nucleus, usually benzene, combined chemically with an aliphatic group derived from petroleum. The purpose of sulfonation of the water insoluble alkyl aryl hydrocarbon is to attach the sulfonic acid group to the aromatic (benzene) ring to provide water solubility corresponding to that of fatty acid soap. The alkyl group, consisting of a branched, or more or less straight, carbon chain of C_{12}-C_{14}, functions as the oil soluble portion of the compound similar to the oil soluble portion of fatty acid.

The simplified diagram upper right illustrates this comparison.

Main Types Alkyl Aryl Sulfonates Manufactured

THE alkyl aryl hydrocarbons are sulfonated to produce four main types of finished products namely:

(A) Dry, light-duty, household detergents and industrial wetting agents, 40 percent active agent and 60 percent Na_2SO_4.

(B) Liquids and pastes of various concentrations, ranging from 25 to 60 percent active agent content, used primarily as industrial wetting agents.

(C) 85 percent active—15 percent Na_2SO_4 flakes used chiefly for industrial compounding.

(D) Dry heavy duty detergents 35-40 percent active agent compounded with various phosphates, silicates, carboxymethylcellulose, dyes, etc. for household laundry use.

Flow diagram center right illustrates the various steps required to produce the above types of products.

Before discussing the variables of sulfonation, it is well to examine the standards of quality for the finished sulfonated products. Due to the nature of the detergent business in general, and the exacting demands of the household trade in particular, high quality is an absolute prerequisite for success. Although the requirements of each type of product vary, and each application may present special problems, it is possible to generalize to some extent. Some of the more important characteristics relating to quality of a 40 percent active dry product are given in table lower right for purpose of illustration. These characteristics will apply, in general to other forms of sulfonated products.

Important Sulfonation Variables

TO achieve a sulfonated product of acceptable or superior qualities, it is necessary first of all to begin with a superior hydrocarbon. Given the proper hydrocarbon, then the variables of sulfonation, purity of other chemicals, plant design and control of sulfonation, will decide the degree of perfection of the sulfonated product.

In order to achieve complete sulfonation (have a low free oil content in the finished product), it is necessary to employ a molar excess of sulfuric acid. The amount of excess acid is dependent chiefly upon acid strength and sulfonation temperature.

Effect of Aging Time on Free Oil Content and Color of Alkyl Aryl Sulfonates

Aging Time Minutes	*% Free Oil Based on Active Agent*	*Klett Color 1% Solution Active Agent*
0	3.27	5
30	2.46	11
60	2.08	13
90	1.31	15
120	2.08	18
150	2.20	20
180	2.23	23

Aryls

By J. E. Kircher
Stepan Chemicals, Inc.
Philadelphia, Pa.

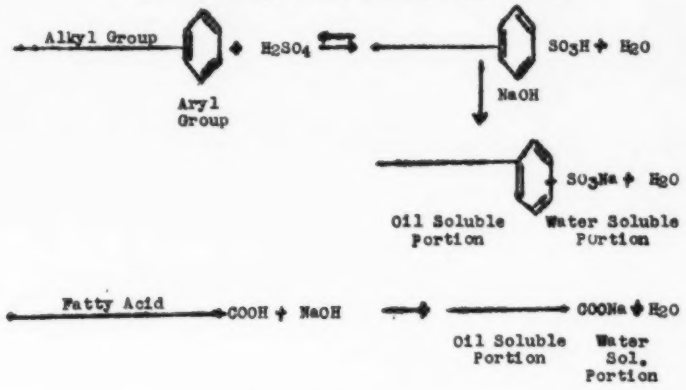
Table lower left illustrates the effect of these three variables. The products for which the sulfonation conditions are described below were essentially equal with respect to performance properties, completeness of sulfonation and color.

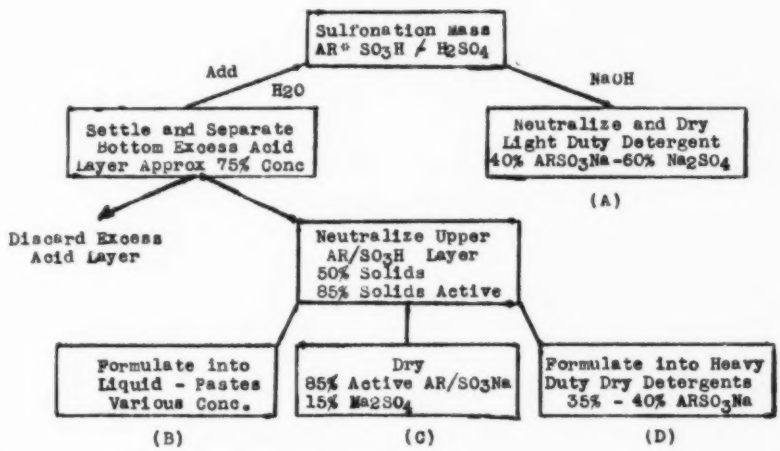
Of equal importance to the factors listed in the foregoing chart, is the efficiency of mixing the two phase sulfonation mass. Although all properties of the sulfonates are comparable when produced according to the above sets of conditions, there is, in general, a greater tendency toward discoloration with oleum (104.5 percent H_2SO_4) sulfonations due to localized charring. This is due primarily to the difficulty of dispersing the oleum during addition to the hydrocarbon, which condition necessitates the maximum mixing efficiency and adequate cooling to keep discoloration to a minimum.

The total time of batch sulfonation must include the charging time of the sulfuric acid and the aging time after acid addition. The charging time is, of course, dependent upon the batch size, the acid strength, which determines the heat evolved, and the efficiency of cooling to maintain the reaction within temperature limits. The aging time to obtain maximum sulfonations with satisfactory color is governed by the acid and temperature variables, and the efficiency of mixing and must, therefore, be determined for each individual plant. The following table illustrates the effect of aging time on free oil content (completeness of sulfonation) and color for a specific sulfonation system. The figures chosen for this illustration were developed from a 20 percent oleum sulfonation

* Presented at 36th mid-year meeting Chem. Specs. Mfrs. Assn., Chicago, June, 1950.

Flow Diagram for Production of Various Forms of Alkyl Aryl Sulfonated Products




Sulfonation Mass
AR* SO_3H / H_2SO_4
Add H_2O
NaOH
Settle and Separate Bottom Excess Acid Layer Approx 75% Conc
Neutralize and Dry Light Duty Detergent 40% $ARSO_3Na$-60% Na_2SO_4
(A)
Discard Excess Acid Layer
Neutralize Upper AR/SO_3H Layer 50% Solids 85% Solids Active
Formulate into Liquid - Pastes Various Conc.
Dry 85% Active AR/SO_3Na 15% Na_2SO_4
Formulate into Heavy Duty Dry Detergents 35% - 40% $ARSO_3Na$
(B)
(C)
(D)

Example of Quality Characteristics for Dry 40% Active Alkyl Aryl Sulfonates

Characteristics	*Standard*
Color	White.
Odor	Absent: Must not develop with age.
Dustiness	Minimum.
Packaging	Must flow freely in packaging equipment.
Package Stability	Must not cake even under humid conditions.
Unsulfonated Hydrocarbon	Should not exceed 0.5 percent.
Drying Properties	Formulated slurries, must be pumpable.* Must spray dry to free-flowing powder of proper density. Must drum dry economically—from high solids slurry, minimum dusting, etc.
Performance	Must equal standards for wetting, foam, detergency, solubility, etc.—Must be compatible with phosphate an dother builders.

* For industrial applications, where solid contents run below 50 percent, this does not usually become critical; but for spray drying operations for household products, where formulated slurries may exceed 60 percent solids, viscosity is an important factor.

Effect of Acid Strength on Sulfonation Conditions

Acid Strength	*Pound Ratio Acid to Neolene 400**	*Hole Ratio SO_3 to Neolene 400*	*Maximum Sulfonation Temperature*	*Time***
98% H_2SO_4	1.66/1	4.08/1	65°C	3 hrs.
100% H_2SO_4	1.40/1	3.50/1	50°C	3 hrs.
104.5 H_2SO_4	1.25/1	3.27/1	25°C	3 hrs.

* Sharples-Continental Corp. Alkylbenzene.
** Time held constant for the particular equipment used.

of dodecyltoluene using a 1.66/1 pound ratio of oleum to dodecyltoluene and a sulfonation aging temperature of 25°C. The Klett color standard is taken from petroleum technology, and the higher the figure, the darker the color of the finished sulfonate.

The iron content of the sulfuric acid and caustic soda is another important factor relating to discoloration, and must be held to a minimum for best results. It follows, therefore, that all materials of plant construction must be resistant to corrosion to prevent iron contamination during processing.

Although there are other minor variables of sulfonation, the above factors are the first to be considered in any study on the sulfonation of alkyl aryls.

Sulfonation Plant Requirements

AFTER the chemistry of the sulfonation process has been studied then the question of plant design must be solved. It has been pointed out previously that there are four main types of products manufactured. For the production of the industrial products such as liquids, pastes, and drum dried material, the minimum equipment required for good operation and flexibility would be a sulfonation kettle—glass-lined or stainless steel—equipped with efficient agitation and cooling systems; a lead-lined settling tank for spent acid removal; a stainless steel neutralization vessel with agitator designed to move heavy pastes; a drum drier, plus the usual auxiliary equipment such as pumps, motors, piping, storage, utilities, etc. In fact, some smaller sulfonators operate with a single glass or lead-lined sulfonator to sulfonate, remove spent acid and neutralize and formulate all in the same vessel, although this type operation would be subject to several limitations. Since iron is probably the most damaging contaminant, greatest precaution should be taken in selection of materials of construction to prevent iron pickup during processing.

It can readily be seen from the simplicity of the equipment involved that the process is readily adaptable to relatively small-scale operation as well as large tonnage production.

Pilot Plant Sulfonation Procedure and Yields

TO illustrate the typical basic steps of sulfonation, the following pilot plant sulfonation procedure employing optimum conditions for the use of oleum is given. Following the sulfonation procedure is a tabulation of analyses and yield data for the production of 40 percent active and 80-85 percent active Neolene 400 sulfonate.

Pilot Plant Sulfonation Procedure

(1) Charge 60 pounds of Neolene 400 to the glass-lined, jacketed anchor-type agitation, Pfaudler sulfonator and cool to 10° C. with cooling water in the jacket.

(2) With refrigeration applied to the sulfonator, and maximum agitation maintained (120 r.p.m.), 75 pounds of 20 percent oleum are pumped to the sulfonator at such a rate to maintain a maximum temperature of 25 - 35°C. Oleum addition usually requires one hour and 20 minutes, for this size charge and cooling surface. (Note: Crushed dry ice, CO_2, can be used experimentally as the refrigerant, by adding directly to the Neolene 400. Approximately 38 pounds are required to control the sulfonation temperature.)

(3) The batch is then agitated (aged) without cooling for 1.75 hours to allow the sulfonation to reach completion. (For larger equipment, having different agitation, cooling, etc. the aging time will differ and the proper time must be determined for each sulfonator to obtain greatest degree of sulfonation, lowest free oil.)

After the aging period, the batch may be neutralized and sodium sulfate added to produce (A) a 40 percent active sulfonate, or the excess acid removed and the sulfonic acid neutralized to produce (B), an 80 - 85 percent active sulfonate.

(A) To produce a 40 percent active sulfonate:

(1) Charge the stainless steel neutralizer, jacketed, and with a heavy-duty anchor agitator, with approximately 290 pounds of 18.5 percent NaOH solution, and cool to 10°C. with cooling water in the jacket.

(2) Feed the acid mix to the neutralizer at such a rate as to maintain a temperature of 50°-55°C.

(3) During the last half of the neutralization, slowly sift into the slurry 44 pounds of anhydrous Na_2SO_4.

(4) Adjust the pH to 8, and the slurry is ready for drum drying to produce a 40 percent active flake.

(B) To produce an 80-85 percent active sulfonate:

(1) To the unagitated sulfonation mass add 33 pounds of crushed ice (H_2O) en masse to the top of the sulfonator, and agitate immediately for approximately ten minutes to achieve complete mixing. The temperature will rise to approximately 52°C., and agitation is stopped when the temperature rise is completed.

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Analyses and Yield Data for Typical Pilot Plant Sulfonations

Analysis Slurry Percent	*40% Active Sulfonate*	*80-85% Active Sulfonate*
# Active Agent by Analysis	82.50	83.2
H_2O	55.97	48.37
Solids	44.03	51.63
Na_2SO_4/Solids	59.66	14.73
Free Oil/Solids	0.76	1.55
Active/Solids	39.55	83.72
Yield		
# Active Agent by Analysis	82.50	83.2
# Active Agent by Theory	85.00	85.0
% Yield	97.00	98.2

(2) Allow the sulfonation mass to stand for one hour and slowly draw off and discard the bottom layer (69 pounds) of spent acid, approximately 63-65 percent H_2SO_4. The interface between the spent acid and the viscous upper layer of Neolene sulfonic acid is determined easily, due to the difference in viscosity of the two layers.

(3) Add the upper Neolene sulfonic acid to the neutralizer charged with approximately 94 pounds of 20 percent sodium hydroxide solution. Agitate efficiently throughout the neutralization, and add the Neolene sulfonic acid at such a rate as not to exceed 55°C.

(4) Adjust the pH to 8, and the slurry is ready either for drum drying, to produce 80-85 percent active flake, or formulation prior to drum or spray drying.

(5) A tabulation of the analyses and yields is shown above.

Although the basic chemical reaction of sulfonation borders on the classical, it is emphasized that care must be taken in the choice of plant, and the control of the sulfonation operation to meet the industry quality standards for the finished alkyl aryl sulfonate detergent.

Synthetic Detergent Literature

ISSUANCE of a 58-page booklet, "A Survey of Recent Literature on Soaps versus Synthetic Detergents," was announced recently by the U. S. Department of Commerce. The report was prepared by James Kanegis, Chief of the department's Chemical Section and retails for 75 cents. Listed below is the bibliography for the survey.

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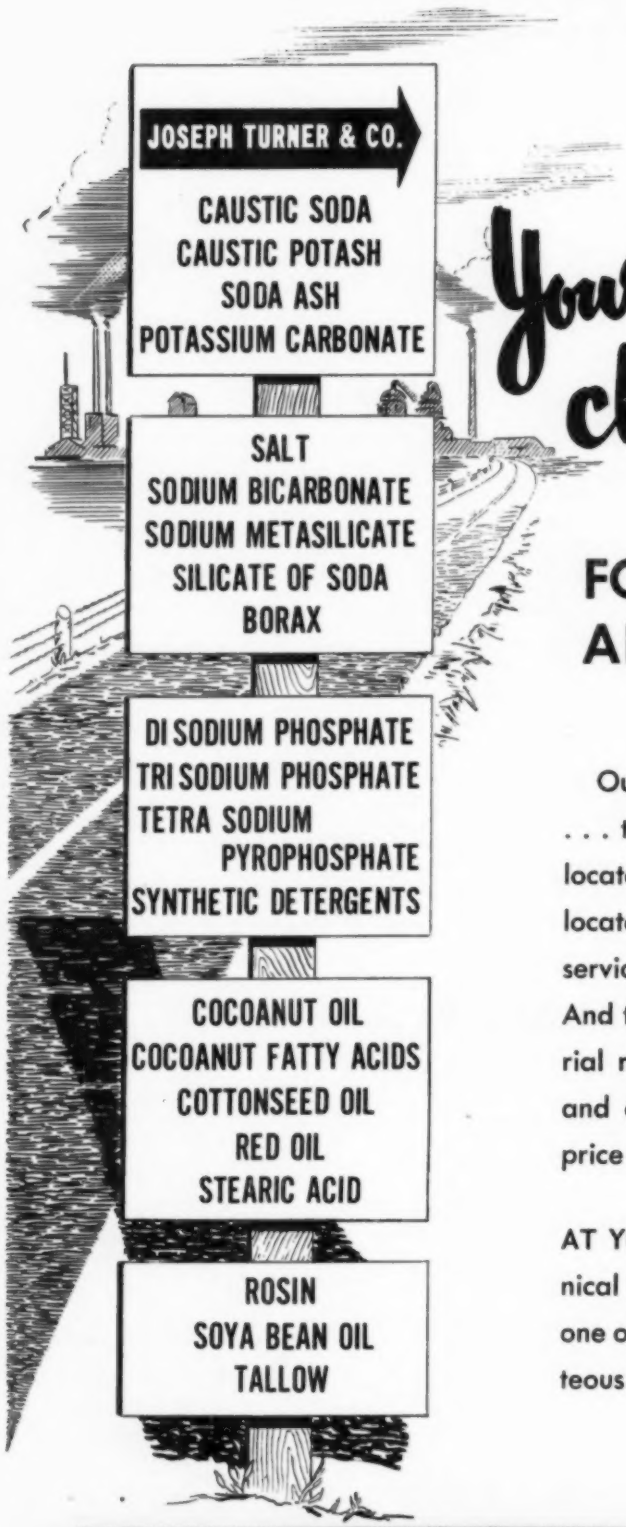

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TRADE NEWS

Heads Economics Lab.

E. B. Osborn, for the past eight years vice-president and general manager of Economics Laboratory, St. Paul, was elected president and general manager at a directors' meeting held Nov. 7, in St. Paul. He succeeds M. J. Osborn, president of the corporation since its inception 28 years ago. Mr. Osborn continues active as chairman of the board.

E. B. OSBORN

M. J. OSBORN

E. B. Osborn entered the firm's employ 22 years ago. He has served in the accounting department, as a sales serviceman, salesman, sales manager, plant manager and general manager. He is 43 years old and a graduate of Dartmouth College. He also attended the Tuck School of Business Administration and Finance.

Economics Laboratory, specializes in detergents for the commercial and domestic dishwashing field. Its products include "Soilax" wall cleaner, "Fun" and "Tumble Suds," home laundry products, "Electrasol" electric dishwashing detergent. The company has plants in Lyndhurst, N. J., Chicago and Santa Clara, Calif.

Honor Paul McKinney

Paul McKinney of Los Angeles Soap Co., Los Angeles, was recently chosen "Headlite" of the Illuminators, honorary organization actively identified with the activities of the California Retail Grocers' Association.

Wrisley Earnings Up

An increase in its net profit for the 40 weeks to Oct. 7, as compared with the comparable period in 1949, was reported recently by Allen B. Wrisley Co., Chicago. In the period ended Oct. 7, 1950, the firm had a net income of $200,747 on net sales of $7,998,708, as compared with $189,602 on sales of $7,384,678 for the corresponding period in 1949.

Bon Ami Earnings Down

A decline in its net profit and earnings for the nine months ended Sept. 30, 1950, as compared with the corresponding period in 1949, was reported recently by Bon Ami Co. and subsidiaries, New York. For this year's first nine months the company had a net profit of $192,947, equal to $2.04 a Class A share, as compared with $291,131, or $3.00 a Class A share and three cents for Class B shares in 1949. The net for 1950 includes $43,061 foreign profits.

Yardley Names Miss Mastin

The appointment of Nan Mastin as advertising and promotion manager of Yardley of London, Inc., New York, was announced recently.

L. I. Soap Names D'Errico

The appointment of Edward D'Errico as sales manager of Long Island Soap Co., Brooklyn, to succeed the late G. S. Steiner, was announced recently. Mr. Steiner, who was 59, died Sept. 10. He had been with the firm for 30 years, and had covered the midtown and downtown sections of New York and Brooklyn.

Noxzema Plant Enlarged

Bunting Chemical Co., manufacturer of the "Noxzema" line of shaving creams and related products, recently awarded a contract for the construction of a third story to a section of its plant at Baltimore.

Billy B. Van is Dead

Billy B. Van, 73, a retired stage comedian who turned to soap making, died Nov. 16 of a heart seizure in Newport, N. H., Hospital. His real name was William Webster Vandegrift. When he retired from the stage in 1927, he organized Pine Tree Prods. Co. Last year he resigned from that firm to organize Vanpine, Inc. of Newport, N. H. Besides acting and soap making, Mr. Van during his career had gone in for dairy farming and lecturing. He was born in Pottstown, Pa., later as a child going to Philadelphia with his mother he made his first stage appearance in the chorus of a juvenile production. A long-time trouper and lecturer on Yankee philosophy, he once toured the country with the late heavyweight boxing champion James J. Corbett. A friend of Presidents Calvin Coolidge and Woodrow Wilson, Mr. Van was widely known in theatrical circles.

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Final Program Details Set for N. Y. AASGP Meeting

SESSIONS and panels on the business outlook for 1951, industrial soaps, glycerine, synthetic detergents, fats and oils, Washington situation, and specialty soaps are being planned for the 1951 Annual Convention of the Association of American Soap and Glycerine Producers, Inc., January 31 and February 1, at the Plaza Hotel.

The convention committee is headed this year by William G. Werner, manager of the division of public relations and consumer information of Procter & Gamble Co., Cincinnati. He is being assisted in the planning and organization of this year's convention by M. L. Westering, Swift & Co., Chicago; R. E. Healy, Colgate-Palmolive-Peet Co., Jersey City, N. J.; A. Hersberger, Atlantic Refining Co., Philadelphia; I. P. MacNair, MacNair Dorland Co., New York; G. Perkins, Perkins Soap Co., Springfield, Mass.; M. J. Roche, Lever Brothers Co., New York; A. W. Schubert, Emery Industries, Cincinnati; and R. H. Young, Davies-Young Soap Co., Dayton, O.

As in the past, the convention will continue for two days. The morning session the first day will open with the annual report of the Association president. Following this will be discussion on market research from A. C. Nielsen Co., New York, and the business outlook for 1951 by an outstanding economist.

The luncheon session on the first day of the convention will be addressed by Rear Admiral Joel T. Boone, Inspector-General-Naval Medical Activities, U. S. Navy and a former White House physician.

The Metropolitan Sunday Newspapers, Inc., will be hosts at a cocktail party for convention members on Wednesday, January 31. This cocktail party will immediately follow a fashion show at which the 1951 "Maid of Cotton" will model her wardrobe.

As at last year's Fashion Show, the wardrobe will be created by the leading fashion designers of the country and after this initial showing will make a tour of the United States, Latin America, France and England. The name of the "Maid of Cotton" who will be elected the last week in December will be announced at a later date.

The second day of the convention will start with a breakfast being given by "True Story Magazine" and the sessions that morning will be on synthetic detergents and fats and oils. John McCutcheon will speak on "The Possibilities of Tallow and its Derivatives in Synthetic Detergents." Other speakers for these two sessions will be announced later.

The convention will be climaxed by a reception and dinner the second evening, at which a speaker of national prominence will address the members and this will be followed by entertainment supplied by the four major radio networks.

In addition to these general meetings, divisional meetings on Industrial Soaps, Specialty Soaps, and Glycerine will be held during the afternoon periods.

In addition to Professor Perry of MIT, who is speaking on industrial soaps, a panel of four experts in this field will round out the panel. This panel will answer questions submitted by members of the Industrial Soap Division of the Association. The session will be set up as an "information please" type of program, with prizes for the members whose questions are selected for answering.

WILLIAM G. WERNER
Procter & Gamble Co.,
Program Chairman

The Glycerine Division meeting, under the chairmanship of N. N. Dalton, association consultant, will review the glycerine picture and glycerine activities during 1950 in promotion and research.

The plans for the Specialty Soap Division Meeting are being arranged by R. H. Young, Davies-Young Soap Co., Dayton, O., chairman of the division, and J. L. Brenn, Huntington Laboratories, Huntington, Ind., vice-chairman.

The regular business meeting of the association will take place the afternoon of the second day of the convention.

Drackett Reports Earnings

A net profit of $582,500, equal to 67 cents a common share as compared with $579,785, also 67 cents a share, was reported recently by Drackett Co., Cincinnati, for the first nine months of 1950 and 1949, respectively.

Rules on "Free" Use

Clarification of its Administrative Ruling of January 30, 1948 in connection with the use of the word "free" in advertising and promotions was undertaken recently by the Federal Trade Commission. The case involved the offering in advertisements of a book "free" to anyone sending 10 cents to cover mailing costs. Persons accepting the offer were obliged to order a set of volumes reserved in their names and were given the privilege of cancelling the order after examining the first volume, which did not have to be paid for or returned if the remaining volumes of the set were not purchased.

A trial examiner ordered the publisher to stop using the word free, but his recommendation was rejected by Commissioner William Ayres, who reiterated the administrative interpre-

Some use Christmas bells...

Some use Christmas holly...

Some use a fat Santa Claus,
Round, red, and jolly...

But our wish takes all of them,
See? They're all here –
To say...

MERRY CHRISTMAS!

And a BRIGHT GOOD next year!

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC., 601 West 26th Street, New York 1, N. Y.

CHICAGO • LOS ANGELES • ST. PAUL • MONTREAL • TORONTO • HAVANA • MEXICO CITY • LONDON • PARIS

tation of Jan. 30, 1948. The essence of that interpretation is that use of the word "free" must not involve the recipient performing some service benefitting the advertiser nor being required to purchase something else to obtain the "free" item. The Commissioner further pointed out that the interpretation "does not have the force of law and was intended only to serve as a general guide for the business community and to outline the circumstances under which the use of the word 'free' and words of similar import are likely to be misleading." Mr. Ayres pointed out that the 10 cent mailing charge covered the cost of sending out the volume. Since the order for the remaining volumes in the series could be cancelled without requiring the return of the "free" book, no charge or performance of service was involved.

TGA Scientific Meeting

A symposium discussion on olefaction, and papers dealing with the "Pilot Plant," "Some Aspects of the Mechanical Behavior of Hair" and "The Pharmaceutical Properties of the Kaolins" highlight the program for the meeting of the Scientific Section of the Toilet Goods Association meeting, being held Dec. 6, at the Waldorf-Astoria Hotel, New York.

"G-11" Soaps APHA Topic

"The Antiseptic Action of Hexachlorophene in Liquid Surgical Soaps" was discussed in a paper of that title before the laboratory section of the 78th American Public Health Association Meeting, Nov. 3, in St. Louis. The paper by Martin Maglio, F. J. Pollnow, Jr., and Rose B. McNamee of Vestal Laboratories, Inc., St. Louis, covered aspects of hexachlorophene ("G-11") concentration.

Other papers dealing with sanitary chemicals presented at the meeting, which was held from Oct. 30-Nov. 3, included "Integrating Public Health and Commercial Rodent Control" by Herman L. Fellton, technical director, Orkin Exterminating Co., Atlanta, Ga.; "Malaria Eradication in the United States" by Drs. Justin M. Andrews, Griffith E. Quinby and Alexander D. Langmuir of the Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga. "Iodine as a Sanitizing Agent for Food and Eating Utensils" was the title of a paper given by Louis Gershenfeld and Bernard Witlin of the department of bacteriology, Philadelphia College of Pharmacy and Science.

Douglas Joins Arvey

Charles V. Douglas, formerly of Heyden Chemical Corp., New York, recently joined Arvey Corp., Chicago,

CHARLES V. DOUGLAS

as manager of its chemical division with offices at 100 E. 42nd St., New York. Arvey recently purchased the caustic and chlorine plant of Heyden in Memphis, Tenn. Before joining Heyden as assistant to John P. Remensnyder, vice-president, Mr. Douglas was New York branch manager for Diamond Alkali Co., Painesville, O. He is president of the Salesmen's Association of the American Chemical Industry.

Ohlsson Leaves Van Dyk

Ernst Ohlsson recently resigned as chief chemist and production manager of Van Dyk & Co., Belleville, N. J. He had been associated with the firm since 1915, having served as a director, vice-president and secretary.

Crosse & Blackwell Cleaner

Crosse & Blackwell Co., Baltimore, recently announced that "Chemico," a general purpose household cleaner made by the firm in England is being introduced on a national scale in the U. S. Long known in Europe, the cleaner is imported in bulk and packaged in the U. S.

Arenco Appoints Reps

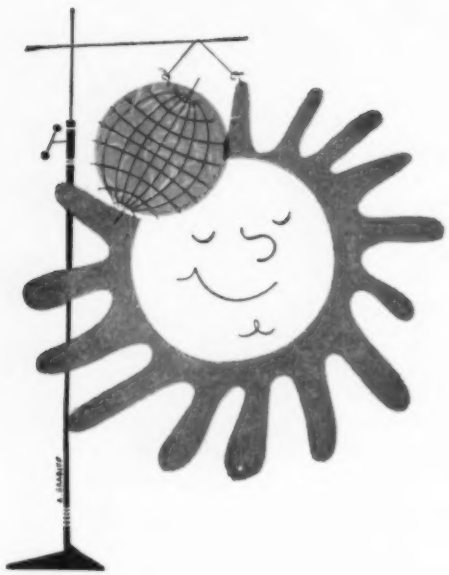
Arenco Machine Co., New York, manufacturers of milling machinery for the cosmetic and pharmaceutical industries recently appointed the following as sales representatives: King and Anderson, San Francisco; H. Lyle Greene, Chicago; R. P. Anderson Co., Dallas; Packaging Equipment, Inc., St. Louis; and Tom McLay, Port Deposit.

Shampoo Decision Reversed

A $27,500 judgment against The J. R. Watkins Co., Winona, Minn., granted to a Minnesota housewife a year ago for alleged personal injuries from use of the company's liquid shampoo has just been reversed in the U. S. Court of Appeals at St. Louis, Mo. Not only did the appellate court reverse the judgment of the lower court, but remanded the case with instructions to dismiss the action.

This entire case was the subject of an article which appeared in the December, 1949, issue of *Soap & Sanitary Chemicals,* accompanied by an editorial condemning the multiplicity of damage suits for alleged personal injuries and particularly the trials of such suits before juries. N. A. Barth of the Watkins legal staff in a recent comment, stated in part: "As indicated in your article . . . the damage that has been done to the reputation of the Watkins company as a result of the verdict of the lower court, is of course conveniently forgotten. I do hope, however, as a result of this reversal, there will be a considerably lower incidence of product liability claims."

Full details of the court decision, not available as *Soap & Sanitary Chemicals* goes to press, will be published in the next issue.



we're not the sun or the soil...

but our oils almost have nature beat!

No, we're not Mother Nature. But we do have her a bit worried because our synthetic essential oils duplicate her products so closely and replace them so effectively. We know that you will be greatly pleased with the advantages these synthetic essential oils offer in low cost, price stability, and greater chemical and olfactory consistency. You're missing the boat if you haven't tried Geranium Synthetic No. 1086, Vetivert Synthetic L.G., Patchol, and others.

Greater Distinction through

Givaudan-Delawanna, Inc.

330 West 42nd Street, New York 18, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Detroit • Chicago • Seattle • Los Angeles • Montreal • Toronto

New Cameo Plant

Cameo Corp., Chicago manufacturers of "Cameo" cleaner, a household scouring powder, expects to move early in 1951 from present quarters at 6440 N. Ravenswood Ave., to a new $160,000 building now under construction at 4600 S. Trip Ave. The new structure, of brick, stone and glass, will provide 21,000 sq. ft. of operating space. When completed, manufacture of a new product, "Cameo Copper Cleanser," will be started, in addition to continued production of the household cleanser, according to Thomas F. Barnes, president.

Cameo Corp. began operations in Minneapolis, Minn., in 1937, featuring for its product a molded plastic container in colors to harmonize with bathroom or kitchen colors. Early in 1938 the company moved to Chicago where it occupied its own building until it was destroyed by fire in 1947. Another move to the Ravenswood Avenue site followed, but this will have to be abandoned, Mr. Barnes said, because of the need for more space to handle production of the expanded line. Other officers of the company are Arthur Price, vice president and sales manager, and Howard Ferrell, secretary.

William L. Schultz is Dead

William L. Schultz, 74, president and founder of Shulton, Inc., New York, died Nov. 13, at East Orange, N. J. General Hospital after a brief illness. He organized Lightfoot Schultz Co. to manufacture soaps and toiletries in 1910, selling the firm in 1933 to American Safety Razor Corp., Brooklyn. A year later, he formed Shulton, Inc., in a small loft in New York. From those beginnings the firm has grown to one of the largest toiletries concerns in the U. S., with a modern manufacturing plant, completed a few years ago, on Route 6 in Clifton, N. J. In addition the firm has subsidiary operations in Mexico, Havana, Toronto and branch offices in Boston, Chicago, Los Angeles and agencies throughout the world. Until the time of his death, Mr. Schultz actively directed these operations from his headquarters at 630 Fifth Ave., New York.

A native of Springfield, O., Mr. Schultz was brought by his family to live in Philadelphia when he was nine. He was educated at Friends' Select School, Wilmington, Del., until he was 16, at which time he began the study of interior decoration. Later he formed his own company, manufacturing leaded glass especially for ecclesiastical work. He continued this until he moved to New York in 1910 and formed Lightfoot Schultz Co.

Mr. Schultz is survived by his wife, Mrs. Mabel LaVie Schultz; a daughter, Elizabeth; a son, George L. Schultz, and a brother, Robert Spencer Schultz of Bernardsville, N. J.

E. Lee Talman, above, recently elected vice-president and director of Lever Brothers Co., New York, was formerly with Coca-Cola Co., New York, as treasurer. He was vice-president executive of Transcontinental and Western Air, Inc., at one time. Mr. Talman assumes his new duties January 1, 1951.

"Unit Packaging" Booklet

"Unit Packaging" is the title of a new booklet dealing with the principles, equipment and advantages of "Sanitape-Sealtite," type packages which was issued recently by Ives-Lee Co., Newark, N. J.

Md. Kills Soap Sales Tax

The abolition of the sales tax on household cleaning items such as soaps, detergents, cleaning fluids, etc., was effected by the legislature of the State of Maryland recently in a special session following the November election. The sales tax law was further amended to remove the tax on all items costing 50 cents or less.

Soap Sales Increase

The Association of American Soap and Glycerine Producers, Inc., New York, announced recently that soap sales for the third quarter of 1950 were 32 percent more than for the second quarter. Synthetic detergent sales also showed an increase of 16 percent over second quarter sales. These figures are based on reports received from 96 member companies.

Total sales of soaps and synthetic detergents reported for the nine month period ending September 30 were 2,636,833,000 pounds as compared with 2,479,126,000 pounds for the same period in 1949, representing an increase of 6.4 percent. Of the total volume sold in 1950, soap amounted to 1,819,126,000 pounds and synthetic detergents to 817,707,000 pounds.

Sales of liquid soap amounted to 4,180,000 gallons in the nine month period. During the third quarter of 1950, liquid soap sales were 732,000 gallons, seven percent above the second quarter of this year and 11 percent above the third quarter of 1949.

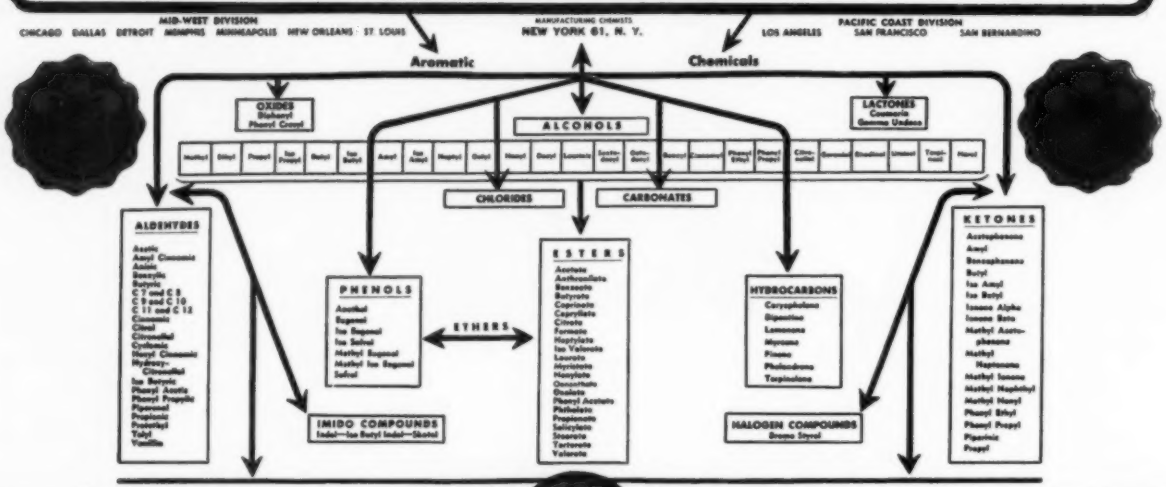
Plans Detergent Expansion

The immediate expansion of its facilities for manufacturing synthetic detergents at both its Philadelphia and Port Arthur, Texas, refineries was announced last month by Atlantic Refining Co., Philadelphia. The estimated cost is between three and four million dollars. Atlantic produces alkyl aryl sulphonates under the trade name, "Ultrawet," for both industrial and household products.

Reception Honors Givaudan

A reception to honor the visit to the United States of Andre Givaudan, head of the Swiss parent company of Givaudan-Delawanna, Inc., New York, was held at the University Club, New York, Nov. 16. Executives of the cosmetic, perfume and allied industries were present at the annual Fall reception. The following day, M. Givaudan departed for Switzerland following a three week visit to the United States and Mexico. A feature of the party was the showing of a diagrammatic demonstration of the growth of the Givaudan factory at Delawanna, N. J.

FLORASYNTH LABORATORIES, INC.



JAN. MAR.

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OCT. DEC.

Year in
Year out..

DEPENDABILITY

Florasynth LABORATORIES, INC.
CHICAGO 6 · NEW YORK 61 · LOS ANGELES 13

DALLAS 1 · DETROIT 2 · MEMPHIS 1 · NEW ORLEANS 13
ST. LOUIS 2 · SAN BERNARDINO · SAN FRANCISCO 11
Florasynth Labs. (Canada Ltd.)
Montreal · Toronto · Vancouver · Winnipeg
Florasynth Laboratories de Mexico S. A. – Mexico City

To Alter Soap Claims

Discontinuance of certain representations regarding the therapeutic value of "Palmer's Skin Success Soap" has been agreed to recently by E. T. Brown Drug Co., New York. The action is taken in response to an earlier Federal Trade Commission citation.

Hooker Makes Changes

Hooker Electrochemical Co., Niagara Falls, N. Y., recently announced organizational changes involving four technical men. Joy E. Beanblossom has been made manager of development; James S. Sconce has been named manager of research and Dr. Bruno H. Wojcik has been named assistant to the technical superintendent.

In the sales development department, James S. Walker has been appointed as supervisor of technical sales-service.

New Givaudan L. A. Office

The Los Angeles office of Givaudan-Delawanna opened its new quarters at 8750 Alden Drive recently. The office is under the management of Ben Cottle, west coast sales representative of Givaudan-Delawanna and Sindar Corp., assisted by Edwin Kung and Mrs. Elizabeth Morgan.

Offer India Soap Plant

In view of the current government ban on imports of soaps and cosmetics into India, the Modi Soap Works of Modinagar, India, is offering fifty per cent of the capacity of its plant in that city to American or other manufacturers whose former shipments to the Indian market have now been cut off. The import of soaps and cosmetics previously sold in India has in some instances been replaced by foreign manufacturers opening their own plants there or producing their products through arrangement with native manufacturers. Reports state that Colgate-Palmolive-Peet are now manufacturing Palmolive soap in India through arrangement with the Tata Oil Mills, Ltd. of Bombay, and that the active market for this soap is thus being maintained. The Modi firm states that 50 per cent of its modern soap and cosmetic plant is now idle and available for a similar arrangement.

Patrick Screen, C-P-P, Dies

Patrick Screen, 62, employed for almost the past 37 years by Colgate-Palmolive-Peet Co., Jersey City, N. J., died recently at his home after a brief illness. He was assistant superintendent in the boiler department.

Shell Names Swackhamer

Shell Chemical Corp., New York, recently has named F. S. Swackhamer manager of its eastern division sales development department. He was formerly assistant manager of the department and succeeds W. S. Thornhill, who resigned to form U. S. Polymeric Chemicals, Inc., Stamford, Conn.

Moller to Coast Firm

James W. Moller, formerly associated with Procter & Gamble Co., both on the West Coast and at the main plant in Cincinnati for eight years, was recently elected vice-president and general manager of Kingsburg Cotton Oil Co., Kingsburg, Calif. He recently returned to the West Coast from New York, where he had been private brands department manager of the Jelke division of Lever Brothers Co.

Fritzsche Boston Manager

Gerald N. D'Amico, formerly assistant manager of the Boston branch of Fritzsche Brothers, Inc., New York, was recently named manager to succeed Harry P. Bowra, who died June 26. Mr. Bowra, for many years representative of Fritzsche Brothers of Canada, Ltd., and since October, 1948, manager of the parent company's Boston branch, was 38 years old.

Mr. D'Amico had previously served as assistant to M. J. Niles, prior to his transfer to Chicago. Mr. D'Amico is a graduate of the Massachusetts College of Pharmacy. He joined the Marine Corps in 1942 and served until his discharge in 1946. In 1948, he joined the sales organization of Fritzsche Brothers, working out of the company's Boston office.

MM&R Advances Barker

Magnus, Mabee and Reynard, Inc., New York, recently announced the appointment of M. Stanley Barker, assistant vice-president, as field sales supervisor for Metropolitan New York, New Jersey and Connecticut. He joined the firm in 1922 and was named assistant vice-president in 1949. Mr. Barker was also the senior sales representative in the east for MM&R.

Lever-Unilever Net Rises

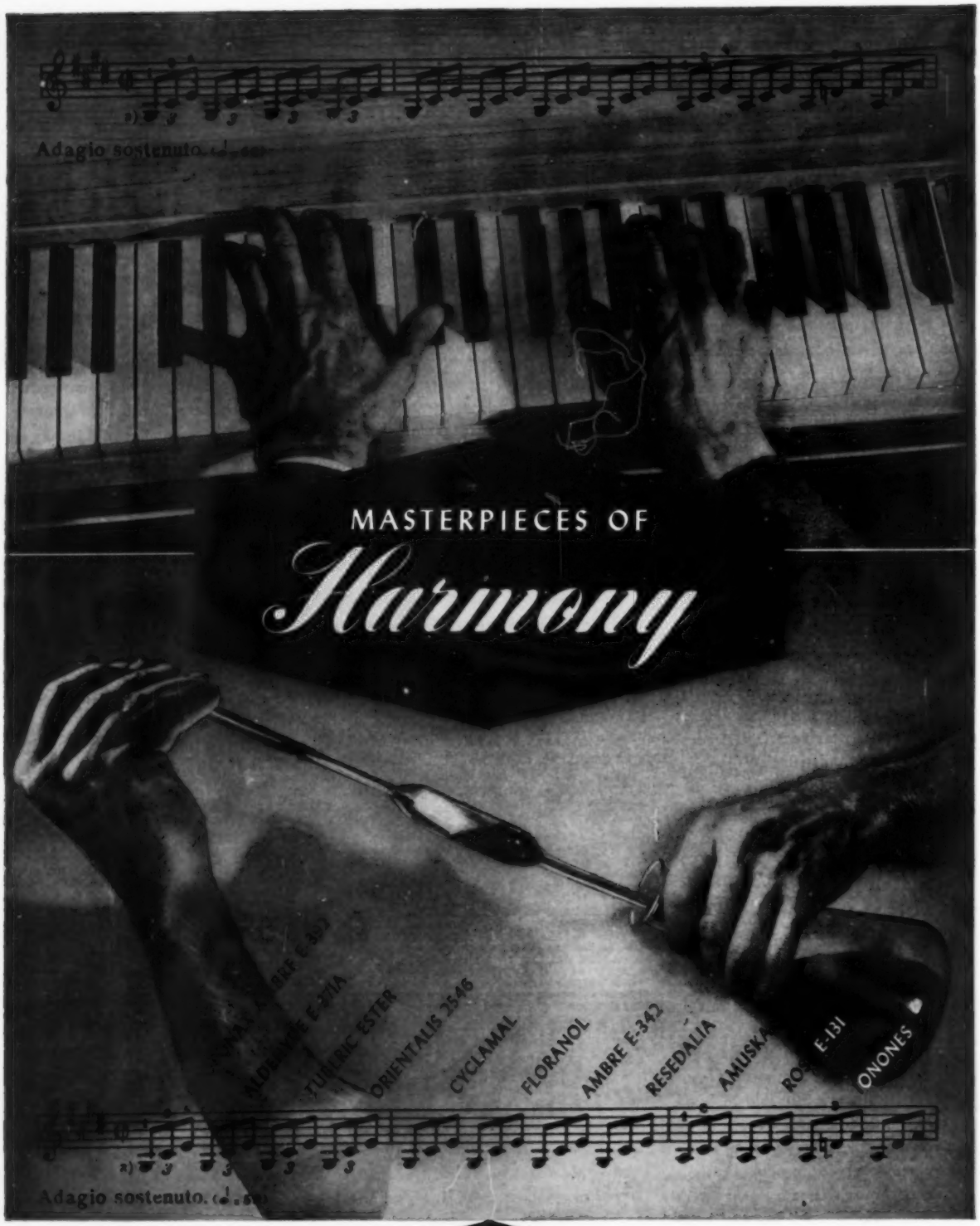
A sharp increase in its consolidated net profit for 1949 was reported recently by Lever Brothers & Unilever, Ltd., the English company and Lever Brother & Unilever, N. V., the Dutch company. For the year a profit of £19,580,127, including approximately £125,000 for Western Germany and Austria, was reported. In the previous year, the company showed a profit of £10,458,709.

Substantial exchange profits in the devaluation of the pound and the guilder in September, 1949 accounted in part for the marked upturn. It amounted to £1,575,452 for Limited and £4,104,430 for N.V., the Dutch company.

£4,135,732 was deducted for stock reserves in 1949 before arriving at the net profit. This year, £1,823,308 has been carried over and is included in the consolidated net profit. The report stated that the tendency for prices to level out during the year has made it unnecessary to make further charges against profits for stock reserves; the retransfer arises because prices in the United States fell during 1949.

Dearborn Honors Employes

Dearborn Chemical Corp., Chicago, added four new members: J. F. Linegman, D. E. Givler, W. R. Wiesendorff and W. Perry, to its employes 25-year club, at a party in the Hotel Sherman, recently. George R. Carr, chairman of the board, who has 49 years of service with the company, presented gold engraved watches to the four. The company now has 46 employes with service records of 25 years or more.



A lilting tune, a delightful fragrance... each depends on the harmony of its *notes*. The purity and fineness of Verona aromatic chemicals will help you achieve harmony in your products and add a fresh *note* of distinction to them.

VERONA

AROMATICS DIVISION

VERONA CHEMICAL COMPANY

26 VERONA AVENUE
NEWARK, N. J.

RAW MATERIAL MARKETS

As of November 24, 1950

ADVANCES in prices of fats and oils during November were general. Tallow moving to its highest level of the year is currently quoted at 14 cents a pound for the fancy grade. Early in November tallow was listed at 13¼ cents a pound. A year ago at approximately this time tallow was bringing 6¼ cents a pound.

Also higher is coconut oil, currently listed at 17¼ cents a pound, crude basis, Pacific Coast. At its present level, coconut is ¾ths of a cent higher than it was quoted on approximately November 2. Copra is presently higher than the early November quotation. Currently it is listed at $222.50 a ton, Pacific Coast basis. Three weeks ago copra was reported selling for $215 a ton.

Other oils on which prices have moved up in the past month include crude cottonseed oil, now selling for 21⅜ cents a pound; crude corn oil, now 21½ cents a pound, was 19¾ cents a pound on Nov. 2; peanut oil (crude), 22½ cents a pound, as against 22 cents a pound earlier in the month; crude soybean oil, 18¼ cents a pound on this date, as compared with 16¼ cents a pound three weeks ago. Lard is up to .1477 cents a pound, from 13¼ cents on Nov. 2.

Some shortening prices were reported to have turned upward as a result of higher prices on fats and oils, but as yet no soap prices have been changed to meet the higher fat and oil prices. Meanwhile, glycerine prices on all grades were advanced by five cents a pound by two producers. The official listing shows the c.p. grade at 49¼ cents a pound in tanks, with one-half cent off on carlots and drums. Less carlots are 50¼ cents and the dynamite grade is now 48 1/3 cents.

The trend to higher prices that marked the first few months of the 1950-51 crop year will continue in that period as a result of increased consumer incomes and greater industrial activity, according to a recent issue of the *Fats and Oils Situation*, published monthly by the U.S. Department of Agriculture. In addition to strong domestic demand, there will be a growing demand for U.S. fats and oils from Europe, according to the U.S.D.A. summary, as a result of continued economic recovery abroad. A further factor that will tend to keep prices at a high level is a slight reduction in the size of the 1950-51 output of oils and fats, as compared with the previous year. The total domestic output of fats and oils during the coming crop year will be about 11.7 or 11.8 billion pounds, according to the U.S.D.A., which is about 200 million pounds smaller than in 1949-50.

Exports of copra and coconut oil, copra basis, during the current year may reach 1949 levels, according to a recent announcement of the Office of Foreign Agricultural Relations. The estimate is based on production figures from the four major supply areas: the Philippines, Indonesia, Malaya and Ceylon. Output for 1950 may reach 1,200,000 long tons, which was approximately the quantity produced in 1949.

Philippine coconut oil and copra exports (copra basis) for the first nine months of 1950 were put at 528,960 tons, an increase of 11 percent of the previous year's comparable total. Indonesia exported 173,334 tons of copra, 28 percent less than in the first three quarters of 1949, and exports from Ceylon slumped from 79,876 tons to 36,490 tons in the first six months of 1950. An increase in its export totals for the first half of 1950, as compared with the comparable period in 1949, was reported by Malaya.

Price increases ranging from ½ to 2½ cents a pound on its fatty acids and processed oils were reported recently by Emery Industries, Inc., Cincinnati.

An advance of six cents in the price of DDT was announced Nov. 27, based on rising costs of alcohol, benzol and chlorine. The technical grade is now selling for 42 cents a pound in carlots.

Price increases on menthol, which moved forward by about 20 cents per pound in recent days, and advances in prices of lavender oil, which is bringing more money in France, as well as higher quotations on Brazilian bois de rose, Italian bergamot and lavandin were reported recently by essential oils sources.

Lift Soap, Fat Controls

IMPORT controls on soap and soap powder, inedible and edible tallow, palm oil, fatty acids, oleo oil, stearine and lard were dropped late in November by the U. S. Department of Agriculture.

The controls date back to World War II when they were established to ration fats and oils among the Allies. They were maintained by the U. S. afterwards to protect domestic prices of supplies built up by the federal farm program.

Still controlled are butter, peanuts, peanut oil, and some other oils and fats, controls on which are due to expire June 3, unless further extended by Congress.

N. E. Chem. Club. Meets

The Chemical Club of New England, at its Nov. 21 meeting at the Parker House, Boston, heard Bill Cunningham, New England newspaper man and radio commentator discuss the current world situation in a talk entitled, "How It Looks from Here."

SEASON'S GREETINGS

To our many friends we extend best wishes for Christmas and the New Year

GEORGE LUEDERS & CO.

427-29 WASHINGTON STREET NEW YORK 13, N. Y.

Branches: Chicago, San Francisco, Montreal

REPRESENTATIVES: Philadelphia, West Acton, Mass., Toronto, Canada, Winnipeg, Canada, Waukesha, Wisc.

One of America's Pioneer Importers and Manufacturers of Essential Oils and Aromatics

NEW TRADE MARKS

THE following trade-marks were published in the November issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Soap Craft — This for toilet soap. Filed Dec. 13, 1946 by Soap Craft, Inc., Chicago. Claims use since Nov. 26, 1946.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of $25 must accompany each notice of opposition.

Kleerize—This for chemically impregnated cloth for preventing steaming and fogging of eyeglasses and for cleaning and polishing them. Filed Mar. 29, 1949 by Lee Products, Philadelphia. Claims use since Sept. 10, 1948.

Santophen—This for herbicides. Filed Apr. 29, 1949 by Monsanto Chemical Co., St. Louis. Claims use since July 24, 1946.

Simplex—This for hand operated compression sprayers for use in applying insecticides. Filed June 15, 1949 by H. D. Hudson Manufacturing Co., Chicago. Claims use since Dec. 31, 1917.

Pathen—This for cleaning compound for automobiles. Filed Mar. 26, 1949 by Henneberry & Co., Chicago. Claims use since Jan. 6, 1949.

J. "33"—This for compound for cleaning boilers, etc. Filed Apr. 9, 1949 by W. H. Powell, Clinton, Pa. Claims use since May 1, 1947.

Airlite—This for kits containing shaving and hand soap. Filed Dec. 8, 1949 by John Hudson Moore, Inc., New York. Claims use since Nov. 17, 1949.

Briefer—This for kits containing shaving and hand soaps. Filed Dec. 8, 1949 by John Hudson Moore, Inc., New York. Claims use since Nov. 17, 1949.

Goatbomb—This for animal insecticides. Filed Mar. 2, 1949 by Innis, Speiden & Co., New York. Claims use since Feb. 14, 1949.

Ceraweld—This for microcrystalline wax. Filed June 11, 1949 by Bareco Oil Co., Tulsa, Okla. Claims use since Apr. 1, 1946.

Humble—This for insecticides. Filed Jan. 10, 1950 by Humble Oil & Refining Co., Houston, Tex. Claims use since Jan. 3, 1935.

Cen-Pe-Co-Motor-Klenz — This for cleaning fluid for flushing and cleaning motors. Filed Dec. 9, 1947 by Central Petroleum Co., Cleveland. Claims use since Dec. 1, 1942.

Mirror Bright—This for cleaners, polishers and finish preservers. Filed Dec. 15, 1947 by Mirror Bright Polish Co., Pasadena, Calif. Claims use since June, 1923.

Suprex — This for tincture of green soap. Filed Jan. 2, 1948 by Superior Products Co., Brooklyn. Claims use since 1939.

Socal — This for cloudy ammonia for use in washing, cleaning, polishing, etc. Filed Apr. 13, 1948 by Southern California Disinfecting Co., Los Angeles. Claims use since Sept. 1, 1918.

A—This for hand soap. Filed Dec. 13, 1948 by Atlas Supply Co., Newark, N. J. Claims use since Nov. 19, 1948.

Waxolene — This for sweeping compound. Filed Dec. 2, 1948 by The Selig Co., Atlanta, Ga. Claims use since Jan. 2, 1909.

Steriplus — This for cleansing preparation for bottles. Filed Jan. 13, 1949 by Philip Fleischman, New York. Claims use since Jan. 4, 1949.

Excelento—This for soap. Filed Oct. 13, 1949 by Excelento Medicine Co., Altanta, Ga. Claims use since Nov. 11, 1912.

Sportline—This for kits containing shaving and hand soap. Filed Dec. 8, 1949 by John Hudson Moore, Inc., New York. Claims use since Nov. 17, 1949.

Detrex—This for metal cleaning equipment. Filed Jan. 14, 1948 by Detrex Corp., Detroit. Claims use since Dec. 20, 1935.

Milsek — This for polishing preparation for wood. Filed Dec. 16, 1949 by Milsek Chemical Co., Youngstown, O. Claims use since 1914.

Hexadow—This for insecticide. Filed Jan. 21, 1950 by Dow Chemical Co., Midland, Mich. Claims use since May 6, 1947.

Kleen-A-Brush—This for powdered detergent preparation for cleaning brush bristles. Filed Sept. 24, 1948 by Sheffield Bronze Paint Corp., Cleveland, O. Claims use since Jan., 1926.

Gee—This for cleanser for general household use. Filed June 1, 1949 by Armour & Co., Chicago. Claims use since Apr. 19, 1949.

C-P-P Man Joins Agency

Herbert D. Stott, advertising business manager and assistant to the media director of Colgate-Palmolive-Peet Co., Jersey City, N. J., recently joined Carl S. Brown Co., New York advertising agency where he is handling publication media.

A-H Names Turner

Arnold, Hoffman & Co., Providence, recently appointed Dwight L. Turner as southern sales manager, succeeding W. Chester Cobb, vice-president in charge of sales, who has been transferred to Providence. Mr. Turner is making his headquarters at Charlotte, N. C.

To Bush Aromatics Post

Vernon K. Galitz was recently named Chicago representative of the Bush Aromatics Division of Dow Chemical Co., Midland, Mich. His territory includes Indianapolis, Milwaukee and Minneapolis and St. Paul.

P&G Awards Service Pins

Service pins to employees who have been with the firm for 25 years or more were awarded recently by Procter and Gamble Co., Cincinnati, to Archie B. Sheppard, Garrett W. Tunnell and Charles Fegara of the Dallas plant. Three recipients of pins at the P&G plant at Kansas City were William Smith, Virgil Flack and George Kear.

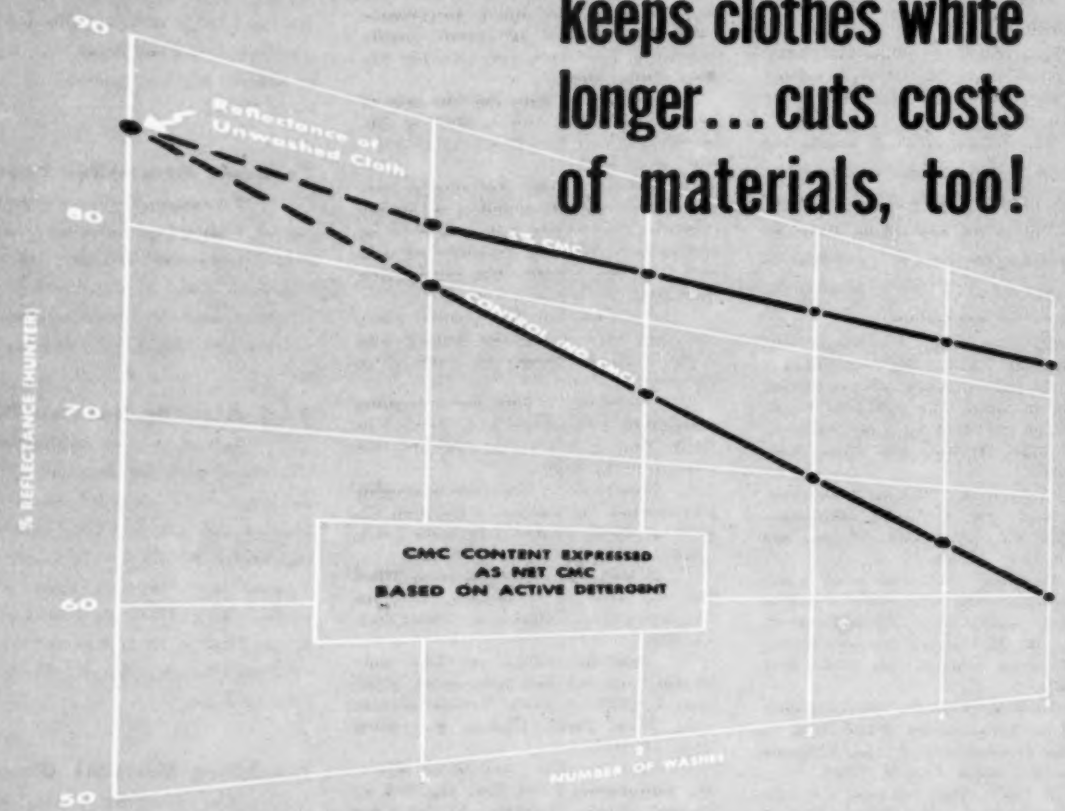
Doubling Sorbitol Output

The doubling of its present production capacity of sorbitol was announced recently by Atlas Powder Co., Wilmington. New production of the chemical is expected to be available early next fall, according to Isaac Fogg, president. Sorbitol is listed as a strategic material by the U. S. Munitions Board. The new production capacity will be provided largely by installation of additional equipment in existing buildings because the present plant was built in anticipation of expansion.

Crude Technical CMC

HERCULES®

keeps clothes white longer... cuts costs of materials, too!

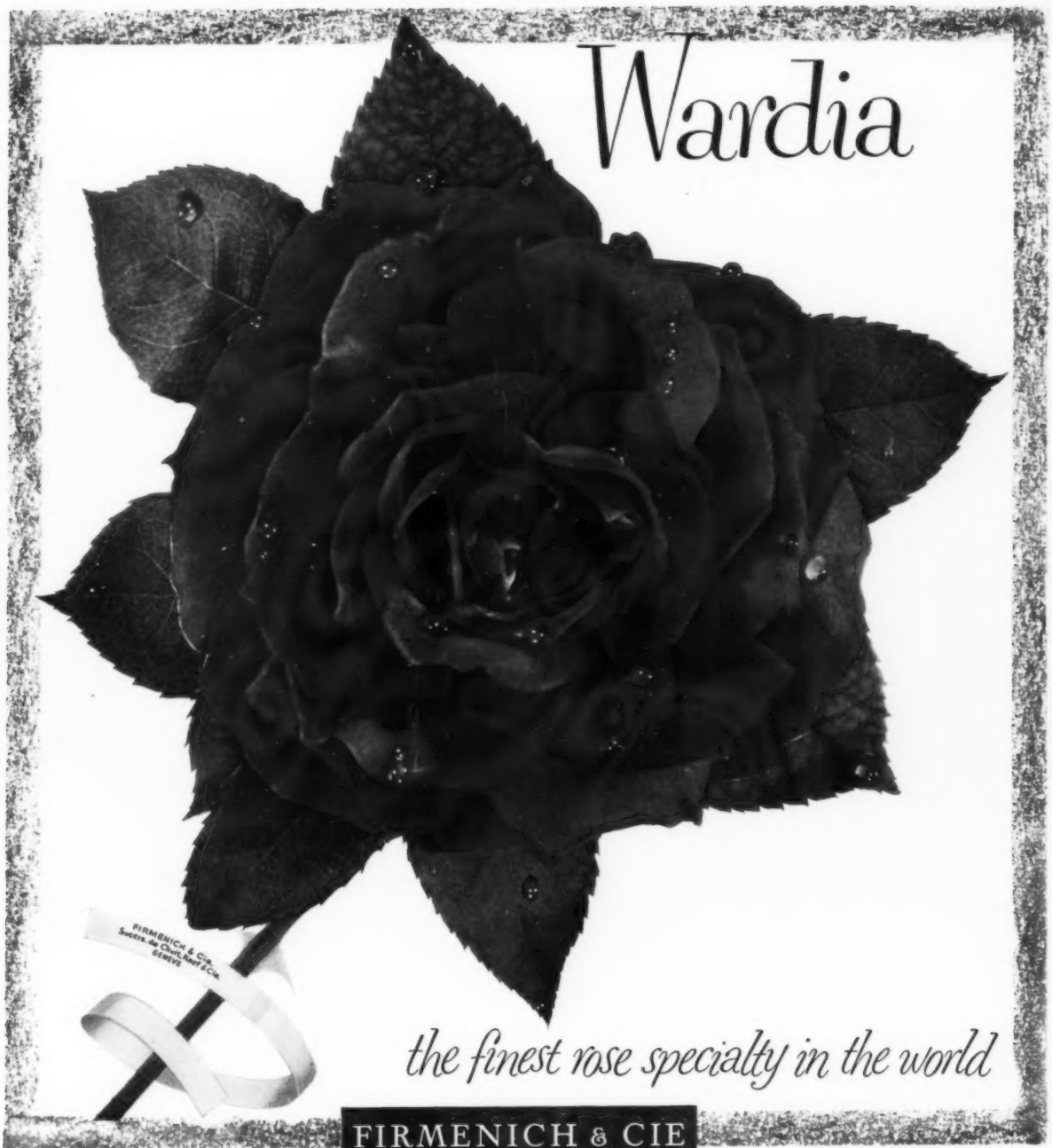


THIS chart proves that Hercules' "CT" grade of CMC, especially prepared for detergents, will do a better job for your laundry customers—*and at no extra cost to you!* This grade of CMC reduces the amount of active detergent needed and permits the generous addition of cheaper alkaline builders.

In this case, the 5% replacement of the active detergent content with "Hercules" CMC ("CT" grade) increases soil removal and whiteness retention properties almost 45% even after five washings. And this greater whiteness is increasingly noticeable with each washing. We will be glad to work with you in adapting CMC to your detergent needs. A purified grade of CMC (cellulose gum) is also available.

HERCULES POWDER COMPANY INCORPORATED 961 Market Street, Wilmington, Delaware

CM50-5



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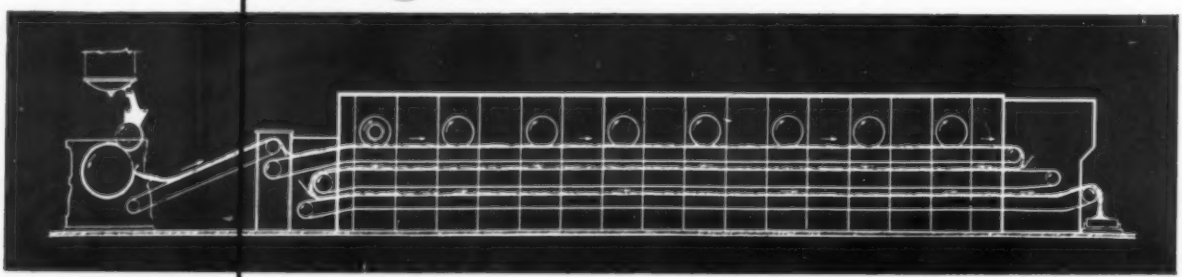
GENEVA, SWITZERLAND . . . PARIS, FRANCE

takes both for good balance



Precision engineered chilling machine

Carefully designed dryer

IN SOAP DRYING, TOO . . .

Anyone who skis knows that it takes both skis and poles for good balance. In flake soap drying there are likewise two important factors for best results. First—uniform ribbons and second carefully controlled drying. There is no chance for uniform drying—even in the most carefully designed dryer—if ribbons coming to the dryer vary in thickness. Neither is there the slightest chance for uniform drying—of even the most carefully made ribbons—unless conditions within the dryer are accurately controlled.

Ribbon uniformity is achieved in direct proportion to the degree of precision with which the chilling roll is engineered and built. Proper drying is brought about only to the extent that there is a uniform circulation of heated air, for the correct drying time and at the temperature to suit the character of the soap being dried.

Combining their knowledge of machine design with an understanding of the needs of the soap manufacturer, Proctor engineers have been able to develop a system that combines a precision designed and built chilling machine for making ribbons—and combine it with a dryer that permits careful control of all factors affecting drying. The speed at which the conveyors carry the ribbons through the dryer may be regulated to suit the characteristics of the individual soap. For the good balance necessary in flake soap drying, many manufacturers have found the Proctor Automatic Flake Soap System the best answer. For an informative booklet describing this system in detail, write today.

Much Proctor equipment is covered in full or in part by patents and patents pending.

PROCTOR & SCHWARTZ, INC.
625 TABOR ROAD
PHILADELPHIA 20, PA.

BIDS AND AWARDS

N. Y. Navy Soap Bids

Bids on an unspecified quantity of soap in a recent opening for miscellaneous supplies by the Navy Purchasing Office, New York, were received from the following: Olive Oil Soap Co., Chicago, item 1, 18.25c, fob plant 1, 15.5c; Armour & Co., Chicago, item 1, 23.78c, fob plant 1, 21.77c; Newell Gutradt Co., San Francisco, item 2, 6.52c, fob plant 2, 6.52c, 6.37c; Pioneer Soap Co., Oakland, Calif., item 2, 8.2c, fob plant 2, 7.95c; Kamen Soap Products Co., New York, item 1, 21.87c, fob plant 1, 19c. John W. Morgan, Sapolio Products Co., New York, item 2, 14.04c.

FSS Misc. Awards

Awards on insecticides in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C., went to Crafton Chemical Co., Richmond, Va., with a bid of $1.50 on item 51-I-156-50; Octagon Process Co., Brooklyn, item 51-I-157-50, 42.9c and Universal Chemical Co., Boston, item 51-I-157-300, $1.80.

The award on floor wax in another Federal Supply Service opening went to Kem Products Corp., Brooklyn, with a bid of 12.3c.

N. Y. Navy Soap Award

In a recent opening for miscellaneous supplies by the Navy Purchasing Office, New York, the following awards have been announced: Continental Soap Corp., Chicago, 750,000 pounds of soap powder, $102,410; Cook Chemical Co., Kansas City, Mo., 60,610 gallons of insecticide, $42,-723.20.

N. Y. QMC Soap Awards

The following awards on soap in a recent opening for miscellaneous supplies by the New York Quartermaster Procurement Agency went to Continental Soap Corp., Chicago, with a bid of $33,678.45 on 272,700 pounds of mechanics' hand scouring soap powder; and Swift & Co., Chicago, with a bid of $35,362.50 on 550,000 cakes of 6-ounce white floating toilet soap.

N. Y. Navy Soap Bids

In a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, the following bids were received on soap: Kamen Soap Products Co., New York, item 1a, 21 cents, 9,000 pounds, item b, 21 cents; Olive Oil Soap Co., Chicago, item 1a, 22 cents.

Dishwashing Comp. Bids

The following bids were received on an unspecified quantity of dishwashing compound in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C.: Economics Laboratory, St. Paul, Minn., 10.04 cents; Industrial Soap Co., St. Louis, 14 cents; Fox Chemical Service, Berwyn, Md., 9.5 cents.

Soap Powder Award

Chemical Manufacturing & Distributing Co., Easton, Pa., received the award on 2,550,000 pounds of soap powder with a bid of $181,105 in a recent opening for miscellaneous supplies by the Navy Purchasing Office, New York.

Misc. F. S. S. Awards

The following awards were announced in connection with recent openings for miscellaneous supplies by the Federal Supply Service, Washington, D. C.: soap, Procter & Gamble Distributing Co., Cincinnati, item 51-S-1430, 12.16 cents; Standard Soap Co., Camden, N. J., item 51-S-1655, 8 cents; Fitzpatrick Brothers, Chicago, item 51-S-1678, 11.5 cents; Stevens Soap Corp., Brooklyn, item 51-S-1730, 5.8 cents; Stahl Soap Co., Long Island City, N. Y., item 51-S-1885, 14.76 cents, item 51-S-1910, 17.93 cents. Paste soap, Skat Co., Hartford, Conn., item 51-P-250-100, 5.4 cents; Murro Chemical Co., New York, item 51-P-2550, 5.4 cents. Floor wax, Kem Products Corp., Brooklyn, item 52-W-465, 11 cents.

Fungicidal Ointment Bids

Low bids on a fungicidal ointment in a recent opening for miscellaneous supplies by the Armed Services Medical Procurement Agency, Brooklyn, were submitted by the following: item 1, Othero Pharmaceutical Corp., Brooklyn, 11.69 cents; items 1a, b, c, d, e, f and g, for St. Louis, Louisville, San Francisco, Schenectady, Atlanta, Mechanicsburg and Oakland, respectively, Associated Brands Co., New York, 11.13 cents, 11.1 cents, 12 cents, 10.89 cents, 11.15 cents, 10.98 cents and 11.19 cents, all or none; 2, Retort Pharmaceutical Co., New York, 22 cents, 2a, b, c, d, e and f, Associated Brands Co., 9.74 cents, 10.36 cents, 9.15 cents, 9.77 cents, 9.67 cents.

SAACI Xmas Party Dec. 13

The annual Christmas party and show of the Salesmen's Association of the American Chemical Industry will be held at the Hotel Astor, Wednesday evening, Dec. 13.

SOCMA Votes on Meeting

A vote of its membership to determine whether it favors a joint meeting with the Manufacturing Chemists Association is being taken by the Synthetic Organic Chemical Mfrs. Assn. The 1950 spring meeting was a joint affair, held in Spring Lake, N. J. MCA has already reserved space for its meeting June 14-16, at the Greenbrier Hotel, White Sulphur Springs, W. Va. SOCMA has a tentative reservation at Shawnee Inn, Shawnee-on-Delaware Pa., for June 4-6.

The annual meeting of SOCMA is being held Tuesday evening, Dec. 12, at the Commodore Hotel, New York. General Robert L. Eichelberger, USA, commander of the Eighth Army from the New Guinea campaigns through the occupation of Japan until 1948, will be the guest speaker at the dinner. A reception and cocktail hour, following a board meeting and annual business meeting, precede the dinner.

— May the coming year bring happiness and prosperity to our many customers and friends, at home and abroad.

A MERRY CHRISTMAS

HOUCHIN

MACHINERY COMPANY, INC.

SIXTH & VAN WINKLE AVENUES — HAWTHORNE, NEW JERSEY

Manufacturers of

SOAP, CHEMICAL AND KINDRED MACHINERY FOR OVER THREE-QUARTERS OF A CENTURY

Let us know what you wish to do—and we will advise you as to what machines will do it most efficiently.

PRODUCTION SECTION

Analysis of Detergents

SURFACE active agents may be identified as to type of detergents as well as to the fine structure of the active principle by a scheme of analysis applying some modified familiar methods. An important factor in the analysis of detergent products is the separation of the active principle from water and other additives. This is one of the pre-analytical steps, which too often is not stressed. In most cases, the active principle of powder and tablet type products may be extracted by boiling the sample with anhydrous alcohol, after a preliminary dehydration, at 105° C. The insoluble additives are filtered off, washed, dried and examined separately. Solutions of detergents cannot be dehydrated by heating, since slow decomposition occurs over the long heating period required for efficient dehydration. Solutions can be dehydrated by azeotropic distillation with a solvent.

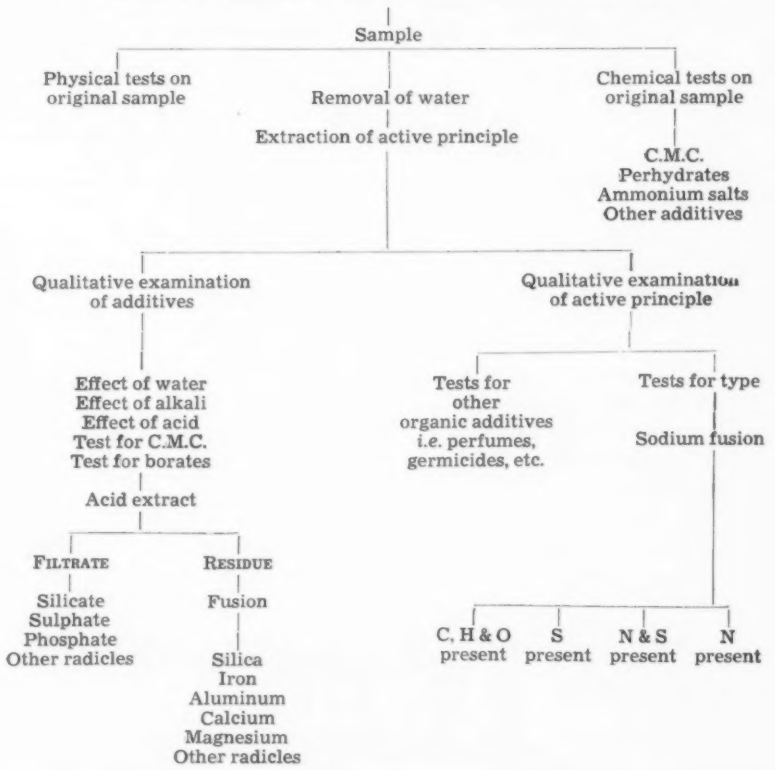
Before submitting a sample to a complete qualitative analysis, it should be examined on the basis of its physical appearance, to permit suitable methods for separation of additives in the presence of substances which might interfere with the reactions. Color, particle size, uniformity, viscosity, sedimentation and similar other properties may give valuable information. The odor of perfume, free ammonia, etc., should be noted, and the sample examined under ultra-violet light, since a pronounced fluorescence of individual particles may indicate the presence of optical bleaches.

The presence of carboxymethyl cellulose may be determined by covering a small quantity of sample on a white tile, with one drop of sulfuric acid, and adding one drop of .1 N iodine solution; a blue color indicates CMC. To test for perhydrates, acidify a two gram sample in five ml. of water with 3N sulfuric acid, add three ml. of two per cent potassium dichromate solution and extract immediately with five ml. ether; a blue color of perchromic acid in the ether layer indicates perhydrates. Ammonia may be identified by boiling the sample in water with magnesium oxide, and testing the vapors with litmus paper.

After the preliminary physical and chemical examination, the sample should be separated into the active principle and additives, and the two parts examined separately. For an identification of only the type of active principle, the procedure of the modified Linsenmeyer test methods is adequate. However, to identify the structure as well as the type, apply the Lassaigne sodium fusion test, which divides the compounds into four groups:

1. C, H and O present
   soaps

GENERAL SCHEME FOR QUALITATIVE ANALYSIS



LEHMANN SOAP FINISHING MACHINES

can broaden your profit margin!

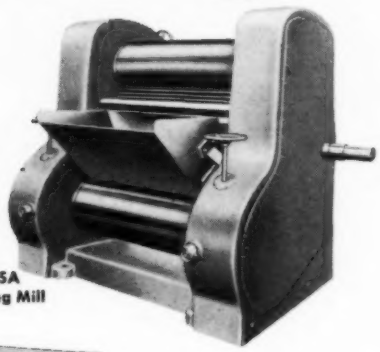
KEEP an eye on that all-too-thin black line—your profit margin. In the competitive markets for toilet soap and polished soap flakes you cannot readily widen the line by raising prices. However, you can often do things to it by reducing manufacturing costs. Manufacturers in many lines are resigned to the thought that increased profits must come, if at all, from further economies in production.

Look sharply at your soap finishing equipment—amalgamators, plodders, mills. Are there any weak sisters in the group? Maybe one of them should have been replaced long ago. Or could it be that you would gain by a complete new installation that would keep you up to, or a step ahead of competition for a long time to come?

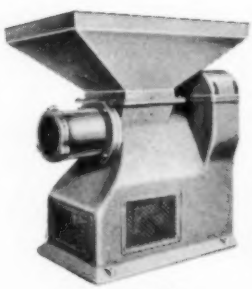
Here is where Lehmann engineering "know-how", based on a century of machinery-building experience, can help you. Consider the installation of a complete Lehmann unit of amalgamator, preliminary plodder, roughing mill, finishing mill and finishing plodder. There is an advantage in ordering all from one manufacturer, with coordination among all the machines and with one responsibility.

Send for descriptive bulletins of any or all machines shown here.

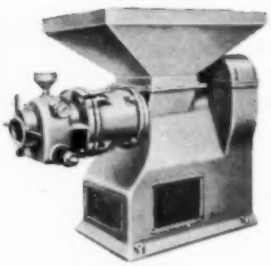
Lehmann Bottom Dump Amalgamator 40G-B



Lehmann 924-SA Four Roll Roughing Mill



Lehmann 310-P Preliminary Plodder



Lehmann 310-F Finishing Plodder

Lehmann 912-SA Five Roll Finishing Mill

LEHMANN

J. M. LEHMANN COMPANY, Inc.

MAIN OFFICE AND FACTORY: 548 NEW YORK AVE., LYNDHURST, N. J.

nonionics

2. S present
   alkyl sulfates
   alkyl sulfate monoglycerides
   alkyl aryl sulfonates
   alky aryl polyether sulfonates
3. N and S present
   fatty acid esters of sulfoacetamide
4. N present
   cationic compounds

Apply the following tests to determine structure:

Carbon, hydrogen and oxygen present

Ignite a portion of the extracted material on platinum foil.

Residue present — indicates SOAP. Confirm by the precipitation of the calcium soap on adding one per cent calcium chloride solution to an aqueous solution of the extracted material.

Residue absent — reflux one gram of material with 25 ml. constant boiling hydriodic acid (iodine free) in a Zeisel alkoxyl apparatus, sweeping the alkyl iodide through the apparatus with carbon dioxide and collecting in alcoholic silver nitrate solution. Continue refluxing until no further silver iodide is precipitated, cool and transfer the contents of the reaction flask to a separating funnel. Remove the free iodine by the addition of ten per cent sodium thiosulfate solution and extract with 20 ml. of ether, discard the bottom layer and wash with 20 ml. of water, reject and extract with 20 ml. of five per cent sodium bicarbonate solution, separate and retain.

Ether layer—wash with water, reject and dry with anhydrous sodium sulfate. A residue on evaporation of the ether indicates ETHYLENE OXIDE CONDENSATION PRODUCT based on PHENOLS. Identify the phenol by the usual tests.

Sodium bicarbonate layer — acidify with dilute hydrochloric acid and extract with 20 ml. of ether, reject the bottom layer and wash the ether layer with 20 ml. of water, reject and dry with anhydrous sodium sulfate. A residue on evaporation of the ether indicates an ETHYLENE OXIDE CONDENSATION PRODUCT based on ACIDS. Dissolve the residue in ten times its volume of alcohol and pass dry hydrochloric acid gas through the solution for 30 minutes, stand 30 minutes, then dilute to five times its volume with water and boil until clear. Cool and extract with petroleum ether, reject the aqueous layer, wash with water, reject and extract with a solution containing .5 grams potassium hydroxide and 5 ml. alcohol in 50 ml. of water. Separate and retain.

Petroleum ether layer — wash with water, reject, and dry with anhydrous sodium sulfate. A residue on evaporation of the petroleum indicates an ETHYLENE OXIDE CONDENSATION PRODUCT based on FATTY ACIDS. Confirm by the hydroxamic test: to one ml. of a solution of the material in ether, add .5 ml. of a saturated alcoholic solution of hydroxylamine hydrochloride and .5 ml. of saturated alcoholic potassium hydroxide solution. Heat over a small flame until slight bubbling occurs. Cool, make just acid with .5 N hydrochloric acid solution and add two drops of one per cent ferrichloride solution. A violet color indicates an ester.

Potassium hydroxide layer — acidify with dilute hydrochloric acid and extract with ether, reject the bottom layer, wash with water, reject and dry with anhydrous sodium sulfate. A residue on evaporation of the ether indicates an ETHYLENE OXIDE CONDENSATION PRODUCT based on RESIN ACIDS.

Confirm by: Storch-Morawski test. Dissolve a small amount of the material in two ml. of acetic anhydride, warming if necessary, cool, and run a few drops of sulfuric acid (s.g. 1.53) down the side of the tube. A red-violet color at the junction indicates resin acids.

Sulfur present

Confirm that the material is the sodium salt of a sulfated or sulfonated compound by examination of the ash for sodium sulfate. Reflux about .5 grams with 20 ml. of two per cent potassium dichromate solution and 20 ml. of dilute sulfuric acid for ten minutes. Distill until the volume of the distillate is about 25 ml. A strong ketonic odor indicates alkyl sulfate or alkyl sulfate monoglyceride. Extract the supernatant oil with ether and test for ketones after removal of the solvent, with sodium nitroprusside or 2:4 dinitrophenyl hydrazine.

Ketones present—mix .1 grams of material with .5 grams powdered potassium bisulfate in an ignition tube. Place three drops of 1 per cent sodium nitroprusside solution and one drop of piperidine in the center of a 7-cm. filter paper, and attach it to the top of the ignition tube by means of a small glass cap. Heat the tube gently at first and then more strongly. A deep gentian-violet which turns pink on the addition of sodium hydroxide solution indicates ALKYL SULFATE MONOGLYCERIDE, and no color formation indicates an ALKYL SULFATE.

Ketones absent — apply the Zeisel alkoxy separation described under C, H and O present. The absence of a precipitate of silver iodide indicates an ALKYL ARYL SULFONATE and the presence of a precipitate of silver iodide indicates an ALKYLATED ARYL POLYETHER SULFONATE. Examine the residue for phenols.

Nitrogen and sulfur present

Boil about one gram material with 25 ml. of five per cent sodium hydroxide solution, testing the vapor for ammonia with litmus paper to confirm the presence of an amide. When the vapor is no longer alkaline, cool and acidify with dilute hydrochloric acid and extract with 20 ml. of ether; reject the bottom layer, wash the ether layer with water, reject and dry with anhydrous sodium sulfate. A residue in evaporation of the ether indicates a FATTY ACID ESTER of SULFOACETAMIDE.

Nitrogen present

Cation active compounds are indicated.

Methods of the ASTM on soaps and detergents may be applied for a quantitative determination. *Manuf. Chem.* 21, No., 9, No. 10, 371-375, 423-426 (1950).

Chlorophyll in Soap

Chlorophyll, available as a water-, oil-, or spirit-soluble product is used commonly as a color agent for soap. *Manuf. Chem.* 21, No. 10, 439.

Stilbene Optical Bleach

The sodium salt of 4,4'-bis [6 chloro-4-(2-hydroxy-ethylamino) - 1, 3,5-triazen-2-yl-amino] -2,2'-stilbenedisulfonic acid is an effective optical bleach. It is prepared by combining 37 parts of 4,4'-diamino-2,2'stilbenedisulfonic acid, 240 parts of water and .2 mols of sodium hydroxide. This mixture is added over a period of 30 minutes to a suspension containing 36 parts of cyanuric chloride, 92 parts of acetone and 1600 parts of water. After stirring for two hours at 20°-25°, the mixture is neutralized with ten percent sodium hydroxide. Thirty parts of 2-amino ethanol are added, and the mixture heated to 50° for one hour. The sodium salt of the stilbene derivative is precipitated with 400 parts of sodium chloride. Brit. Pat. 623,849 through *Chem. Abstracts.*

Potash Soaps

Potassium soaps, particularly those in which more than two-thirds of the fatty acids present are combined with potassium, are manufactured by saponifying triglycerides, fatty acids, or a mixture of the two,

For a SURFACTANT
(anionic, non-ionic or cationic)

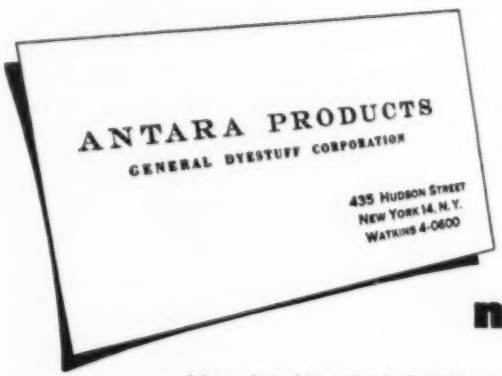
an **ANTARON** or an **IGEPAL**

an **IGEPON** or an **ANTAROX**

an **ANTARANE** or a **NEKAL**

an **EMULPHOR** or an **ANTARATE**

a **PREVENTOL, RAMASIT, NULLAPON, COLLORESINE** or other finishing agents



...one source of supply now serves all your needs

More than 30 major industries need one or more of the types of products suggested in the brief listing above. Now all are available from one source. One of these may make your product *easier to sell* or *less expensive to manufacture*.

As of October 1, 1950, Antara Products—General Aniline & Film Corporation was merged with the Organic Chemicals Division of General Dyestuff Corporation.

The new *Antara Products Division of General Dyestuff Corporation*, thus formed, will coordinate and handle the sales and services of all chemicals, intermediates, and allied products made by the General Aniline & Film Corporation.

Extensive research staffs and facilities support the development and application of all Antara Products—available to work with you in the improvement of an existing product or the development of a new one. Your inquiry is invited—without obligation. It will bring a prompt opinion as to whether one of the Antara Products may be adaptable to your needs. Kindly address your inquiry to Department **65**.

NOTE: The Dyestuff Division of General Dyestuff Corporation will continue to operate as before, without change in personnel or policy.

ANTARA® PRODUCTS

DIVISION OF

GENERAL DYESTUFF CORPORATION

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BRANCHES

Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco • Oakland

In Canada: Chemical Developments of Canada Limited, Leaside, Toronto 17

with an aqueous solution of potassium hydroxide, free from potassium carbonate. The product obtained should be held at a temperature near to and below its boiling point. A partial fatty acid ester of a polyvalent aliphatic alcohol, as of glycerol, polyglycerol, ethane diol, or butanetetrol may be incorporated in the product by saponification. The ester may be added as such, or formed *in situ* by partial saponification of a triglyceride.

The presence of partial esters renders the solid soap more unctuous. The absence of free potassium hydroxide or carbonate from soaps enables them to retain their initial homogeneous stucture on prolonged storage. Brit. Pat. 601,651.

Surfactants from Petroleum

TWO important surface active by-products produced in refining petroleum are the naphthenic acids, which occur naturally in the crude oil, and the petroleum sulfonic acids, which are produced in treatment of the petroleum fractions with sulfuric acid. The naphthenic acids and their salts the naphthenates have been used widely as driers, fungicides, soaps and emulsifying agents. The sulfonates are noted particularly for their emulsifying, solubilizing, blending properties and low cost. They have also been patented for a number of applications, as shampoos and shaving preparations, for which they are ill suited.

The major production of sulfonates occurs in the treatment of lubricating and white oil stocks with oleum. In the preparation of white oils, the raffinate, obtained by solvent-extracting the appropriate distillate, is treated repeatedly with oleum to remove all the aromatic constituents and yield the required colorless, white oil.

The aromatic constituents are agitated with oleum, and the mixture allowed to stand to separate into the two layers, the efficiency of the separation depends largely on the time allowed and also on the type of oil treated. The upper acid layer contains most of the oil-soluble sulfonates, and a trace of the water soluble salts; the bottom or sludge layer contains the water-soluble sulfonates and a small amount of the oil-soluble acids. The oil layer is washed with aqueous alcohol to extract the free sulfonic acids, or may be neutralized with an alcohol alkali, and the acids extracted as alkali salts. The sludge layer is washed with water, neutralized, and the water soluble sulfonic acids separated by alcohol extraction.

The petroleum sulfonic acids can be classified into three main groups: (1) α sulfonic acids, found mainly in the sludge layer. The calcium salts of these acids are soluble in both water and ether; (2) β sulfonic acids, found mainly in the oil layer. The calcium salts of these acids are soluble in ether but insoluble in water; (3) γ sulfonic acids, found almost entirely in the sludge layer. The calcium salts of these acids are insoluble in ether but soluble in water.

Most of the petroleum sulfonic acids and sulfonates are soluble to some extent in both water and oil, but are classified usually according to the preferential solubility of the parent sulfonic acids or the sodium salts. The oil soluble petroleum sulfonates are used: in the manufacture of soluble oils for metal cutting operations; in the preparation of anti-corrosive lubricating oils and protectives; as catalysts in the Twitchell fat splitting process; in the manufacture of floor, furniture, and shoe cream polishes; in compounding agricultural and horticultural sprays; and in the formulation of emulsifying degreasing agents. The more refined grades of the oil-soluble petroleum sulfonates are used in the production of emulsifiable oils for textiles. R. Leslie *Manuf. Chem.* 21, No. 10, 417-419 (1950).

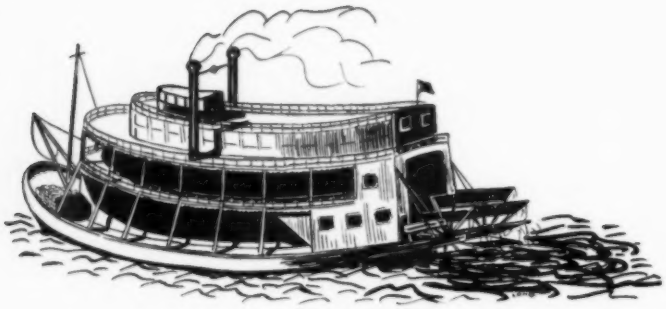
Metal Cleaning Products

THE cleaning of metal parts, other than engine parts, in the aviation industry generally comprises both soil removal and oxide removal. Solvent emulsions are used commonly for skin cleaning and generally contain potassium or similar soaps diluted at use with a solvent such as kerosene, tall oil or cresols. The solvents serve to soften oil-bound dirt, and are removed with the soap and dirt in the water rinse.

Phosphatizing agents are used commonly to remove corrosion products, leaving a film of aluminum phosphate, which acts as an inhibitor of further corrosion. The heavy oxidation of exhaust panels, and subsequent staining, presents another cleaning problem in the aviation industry. Protective coatings on the panels have not been found satisfactory, since these tend to acquire deposits. The panels are cleaned best by paint strippers containing chlorinated hydrocarbons and or phenols.

One of the major cleaning problems is the abuse of instructions. Cleaning personnel seem to have much difficulty in refraining from using increased amounts of cleaners, even where instructions specifically state that the concentration of cleaner be kept low. Synthetic wetting agents have not proved practical in the aviation industry, particularly because of abuses in application, and also due to the limitations of areas on the plane over which they can be used.

Stains are sometimes due to the cleaners themselves, occurring often when the cleaner is to be applied in the hot sun, or when the plane is wet with rain. On windy days the cleaner may evaporate before the rinse is applied, thereby staining the metal surface. One theory attributes these stains to petroleum base solvents or an excess of tall oil soaps in some formulas. Petroleum base solvents, applied to hot skins, may form stains which are due to the formation of sulfur compounds. To avoid this problem, one manufacturer uses only cresols of coal tar origin. (*Turn to Page* 85)



Since the Days of the "Stern Wheeler"...

CHECK YOUR NEEDS FROM THIS LIST

VEGETABLE OILS

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Castor
Cocoanut
Corn
Cottonseed
Olive
Palm
Peanut
Sesame
Soybean

ANIMAL FATS

Sperm Oil
Oleo Stearine
Lard Oil
Neatsfoot Oil
Grease
Tallow
Lanolin

FATTY ACIDS

Red Oil
Tall Oil
Stearic Acid
Hydrogenated Fatty Acid
Cottonseed and Soybean Fatty Acids
Tallow

ALKALIES

Caustic Soda, Solid, Liquid, and Flake
Soda Ash, Light and Dense
Carbonate of Potash, calcined and hydrated
Calcium Chloride
Tri Sodium Phosphate
Tetra Pyro Phosphate
Quadrafos Granular and Beads—a stable polyphosphate for water conditioning and mild but effective detergency.

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SINCE 1838, we've been supplying the nation's "soapers" with basic raw materials.

SILICATE OF SODA—Liquid powdered and solid.

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U.S.I. CHEMICAL NEWS

December ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1950

New Chemical Assay for Panthenol, Pantothenates

Development of a rapid colorimetric method for the determination of panthenol and pantothenates has been announced. Since panthenol and pantothenates assume considerable importance as members of the vitamin B-complex family, the method should be of great interest to manufacturers of vitamin preparations.

The colorimetric procedure is based on formation of pantoyl lactone by hydrolytic cleavage in acid medium. The lactone reacts with hydroxylamine in the presence of alkali. The hydroxamic acid thus formed yields a purple color upon acidification in the presence of ferric chloride. This color is utilized for photometric measurements.

With the new assay, results can be obtained in shorter time than required by present microbiological procedure, it is claimed, with good agreement between both. The method reportedly can be applied for the assay of panthenol and d-calcium pantothenate in pure form as well as in tablets and ampuls. An adaptation of the method is said to deal with the determination of panthenol in multivitamin preparations. Through the use of an ion exchange resin column for the absorption and elimination of interfering ionic substances, the method is rendered specific for panthenol.

Booklet on Fundamentals Of Fire Extinguishment

A new 4-page booklet on fire has been released by a fire extinguisher manufacturer. It contains illustrated discussions of what fire is, classes of fires, and proper methods of extinguishment. Originally introduced as an aid in training company salesmen, it has been widely requested and used by fire departments, industrial fire brigades, insurance companies, and other fire protection groups. Copies are available from the company.

Patent Paper Parachute

A new, improved paper parachute is claimed to have many uses and to stand up under storage conditions. According to a recent patent, paper for the parachute is treated with 1 to 4½ parts of glycerine in 100 parts of commercial alcohol. When the paper has been thoroughly saturated, excess solution is removed and the alcohol is evaporated from the paper. Paper treated this way reportedly may be folded and tightly packed for storage without damage to it or cracking at the folds.

Dry Lubrication Processes

Processes said to impregnate surfaces of metals, plastics, rubber and ceramics with graphite so as to produce a dry lubricating film that reduces friction and wear are now being offered by an eastern firm. They are reportedly available on a job work basis, or if volume warrants, on a licensing arrangement.

Southern Agricultural Leaders See Practical Demonstration of New Control for Corn Insects

Guests Find 800 Bushels of Corn Still Insect Free After Treatment with Pyrenone Grain Protectant in June, 1949

THOMASVILLE, GA.—Pyrenone Grain Protectant, a new control for the insects which eat up half of the corn crop and thereby cheat the South out of a profitable livestock market, was recently demonstrated at the Greenwood Farms plantation to federal and state farm specialists and agricultural leaders from ten southern states. Dr. Walter E. Dove, director of entomological research for U. S. Industrial Chemicals, Inc., of Baltimore, and former chief of the Division of Insects Affecting Man and Animals, United States Department of Agriculture, said that the dream of the South in developing a livestock industry can never be realized as long as nothing is done to curb the insect menace.

150 agricultural leaders from Federal Government and 10 Southern states watching demonstration of application of Pyrenone Grain Protectant to corn.

"Insects, principally the rice weevil, eat almost as much corn and other grains as do animals in the South," Dr. Dove declared. "In too many instances, cattle have to be sold or otherwise disposed of in the spring because corn that was stored comparatively free of insect infestation in the fall is completely destroyed."

Dr. Dove spoke at a demonstration of the application of Pyrenone Grain Protectant on three types of corn storage, shelled, husked and unhusked. The Pyrenone Grain Protectant, which tests have shown to be free of toxicological hazards to humans and warm-blooded animals, is mixed directly with the corn to prevent insect infestation. Guests at the demonstration also inspected 800 bushels of corn which is still insect free after treatment with Pyrenone Grain Protectant in June, 1949.

Can Save Millions

Dr. Dove told his audience of 150 persons that the new insecticide can save the South untold millions of dollars. Its use, he said, is not limited only to corn, but can be effectively applied to rice, barley and other grains. A companion product, Pyrenone Wheat Protectant, was introduced this year for treatment of stored wheat. In both products the insecticidal ingredients are the same — a com-

MORE

New Data on Concentration vs. Germicidal Efficiency of Ethyl Alcohol

From the wide range of concentrations in which ethyl alcohol destroys the moist vegetative forms of bacteria, it appears that too much emphasis has been placed on the importance of diluting 95 per cent alcohol to a lower concentration. The statement that 95 per cent alcohol is practically worthless as a germicide needs to be qualified, according to a recent report in a scientific journal. It is not true when referring to the moist vegetative forms of bacteria.

Escherichia coli, *Salmonella typhosa*, and *Serratia marcescens* were killed, it is claimed, in 10 seconds or less by concentrations of ethyl alcohol of 100 to 40 per cent by volume. *Pseudomonas aeruginosa* was reportedly killed in 10 seconds or less by concentrations of 100 to 30 per cent by volume. Fifty to 90 seconds were said to be required to kill *Micrococcus pyogenes*, variety aureus, and *Streptococcus pyogenes*, respectively, by absolute ethyl alcohol. The organisms were killed in 10 seconds or less by concentrations of 95 to 60 per cent. Forty-eight hours were reported required to kill a 24-hour-old broth culture of *Bacillus anthracis* by concentrations of alcohol of 100 to 95 per cent.

Compounds in 50 per cent alcoholic solutions, which are recommended for disinfectants, probably owe their germicidal action in large part to the alcoholic solvent.

Mosquitoes Tagged with Radioactive Phosphorus

In an experiment in a western state, a million mosquito larvae have been treated with radioactive phosphorus. Within 24 hours, a larva absorbs enough P^{32} from a solution to make it detectable through its entire adult life. Later the mosquitoes are gathered and identified to determine two important facts: how long a mosquito lives and how far it flies. The work is expected to be the pilot study of future investigations of dangerous insects.

December ★ **U.S.I. CHEMICAL NEWS** ★ 1950

CONTINUED

New Control for Insects

bination of piperonyl butoxide and pyrethrins—and only the diluents, or carriers, differ. For Pyrenone Grain Protectant, fibrous talc is used as a carrier, and for the Wheat Protectant, finely-ground wheat is the diluent. The Pyrenone insecticides, he said, have been available commercially for several years, but their use in Grain and Wheat Protectants was investigated thoroughly for three years before they were produced for consumer use.

"The field tests with the Protectant have always shown a worthwhile degree of control

Some of party inspecting corn before and after treatment with Pyrenone Grain Protectant.

of the common grain insects, the degree of control depending upon the coverage obtained," Dr. Dove stated. Treatment of unshucked corn, which is always more or less field infested, can only give partial protection by preventing the spread of infestation to sound ears. Farmers say this is well worth while and they are not looking for miracles. On shucked corn, the degree of protection is much higher as the insecticide comes in direct contact with insects as soon as they emerge. The difference in the protection obtained certainly makes it worthwhile to shuck the corn before it is treated.

Dr. Dove said that a conservative estimate of protection on stored shelled corn was 10 months, and added that the treatment of stored shelled corn was definitely superior to that of the other two methods of storage now in common use.

Applying Pyrenone Grain Protectant by the layering method to snapped corn during the demonstration.

Develops New Vaccine Effective Against Mumps

Production of a preventive vaccine against mumps, one of the most common diseases of both childhood and adulthood, was announced recently. The vaccine, which may give immunity lasting for one year following the administration of two injections, is recommended for routine inoculation of children housed together in large groups, such as summer camps and orphanages, according to the announcement.

The scientist who developed the vaccine stated that the virus used in its manufacture is cultured in chick embryos. After a suitable incubation period, the fluid from a sac called the allantois is removed from the egg and centrifuged to obtain the virus sediment. This sediment is put into solution, inactivated with formaldehyde, and standardized with respect to its immunizing capacity. Before the vaccine was released, the announcement stated, more than 1600 individuals received vaccine, the greater part of this number with the cooperation of a state board of health.

TECHNICAL DEVELOPMENTS

An emulsion-type synthetic resin wood glue, designed for high shear strength coupled with a minimum of cold flow, has been introduced. It can be prepared in any desired viscosity to suit needs of the fabricator. **(No. 629)**

A new clear, quick-drying, plastic synthetic finish for hardware made of brass, iron, copper, gold, cadmium, chromium, and nickel has been announced. It can be treated to give steel or aluminum a gold or brass appearance. **(No. 630)**

A chlorinated rubber-base enamel for application by spray or brush on tank exteriors, structural steel, and concrete subjected to severe chemicals, is said to stand up to chemical fumes, calcium chloride deposits, and other chemicals. **(No. 631)**

Denser, stronger, more uniform concrete blocks and bricks are said to result from addition to the mix of small amounts of a surface active agent. It permits use of less water, providing "dry" concrete of greater strength. At the same time, plasticity needed for molding blocks and bricks is improved. **(No. 632)**

A new portable electroplating set operating on 110 volts AC can be used in electroplating gold, silver, copper, nickel, brass, cadmium, and tin, it is reported. **(No. 633)**

A new water repellent said to make all types of fabric impervious to moisture will be introduced soon in "bomb"-type dispensers. **(No. 634)**

A new refillable ion exchange unit designed for small-quantity users delivers, from an ordinary faucet, water equal in chemical quality to triple-distilled. **(No. 635)**

An abrasive metal said to be corrosion resistant and unbreakable has been developed. High tensile strength and yield points, ability to withstand impact without cracking or breaking, and antislip qualities are mentioned by the maker as advantages in ladder and stair treads, car steps, and running boards. **(No. 636)**

A portable vapor steam generator which supplies large quantities of high pressure steam for short or sustained periods has been announced. This machine reportedly develops 200 lb. working steam pressure in two minutes from cold water and makes over 3,500 lb. of steam an hour, at 75- to 300-lb. steam pressure. **(No. 637)**

A packaged electrolytic plant for converting salt into caustic soda and chlorine at the point of use has been developed. It consists of a mercury cell complete with denuder, a power rectifier, brine operation tanks (arranged vertically), brine recirculation equipment and caustic receiving tank. Space occupied is 3.5 by 25 feet. **(No. 638)**

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PRODUCTION CLINIC

By E. G. THOMSSEN, Ph.D.

LAST month in our discussion of newer and older type detergent raw materials, we covered ammonium, sodium and potassium salts, through the phosphates. We will complete the subject in this issue.

The silicates have long held a prominent place in the detergent field. As the raw materials from which they are made are plentiful, their price is low. And since their performance is very satisfactory, their use is extensive. White silicated soaps long ago outmoded yellow rosin soaps because of their more ready consumer acceptance. In building soaps, a liquid silicate of about 41° Baume density is used most frequently, although a more concentrated 60°B. liquid is also available. The 41° density contains approximately 38% solids. Silicon dioxide or silica, and soda ash enter into the making of silicates. As the proportions are varied or a certain amount of caustic soda is added, a number of different silicates with varying amounts of sodium oxide to silica proportions are possible.

In the maintenance chemicals' industry, the powdered or granular silicates are of more interest than the liquid products. These come into the market under various coined names but chemists term them as metasilicates. Since silicic acid, which is formed by a combination of silica and water, is a very weak acid, it is difficult to determine just when it is neutralized when soda ash, for example, is added to it. If one part soda ash is added to one part silica, the metasilicates are formed. When two parts of soda ash are added to one part of silica, orthosilicates are formed. Many intermediate mixtures are possible. By processing these under proper conditions, it is possible to include water of crystallization and make freer flowing crystals. These are known as sodium sesquisilicates and as pentahydrate sodium metasilicate. They contain about 40% water, yet are uniform granules, with a medium alkaline pH value.

Potassium silicates also are to be had. Their use is recommended in transparent, liquid detergents, especially those in which potash liquid soap is an ingredient.

DR. THOMSSEN

The carbonates are used in detergents very extensively. Soda ash or sodium carbonate has long been the standby for all types of detergents and especially as a builder in laundry soap and soap powders. It comes in light and dense grades and has a pH of about 11. As it readily takes up water and crystallizes, it also may be had as monohydrated crystals or as sal soda containing considerably more water. Both these hydrated grades lose water at elevated temperatures and are apt to cake. As soda ash is low in price and possesses detergent and water softening properties, it is a common ingredient in most alkaline detergents. The sodium acid carbonate or sodium bicarbonate is used to a limited extent as a detergent especially when it is desired to lower the pH. Rather than making mechanical mixtures of sodium carbonate and bicarbonate, sanitary chemical manufacturers prefer to use the readily prepared free-flowing crystals known as modified soda or sodium sesquicarbonate. These crystals contain water of crystallization but are uniform in composition and free flowing. They blend readily with other powdered or granular materials and are non-caking. As their pH is low (about 10), they make for milder types of detergents.

Potassium carbonate, also termed pearl ash and salt of tartar, has properties similar to soda ash. It finds a limited use.

Borax, sodium borate or sodium tetraborate is used in large volume in detergents. Because of its low pH, about 9.5, and mild action, it has long been a favorite addition to powdered hand soaps and hand dishwashing compounds. Sodium metaborate is available but finds only a limited use. It is a crystalline powder containing considerable water of crystallization. It effloresces upon exposure to the atmosphere and is apt to cake.

Synthetic detergents, also termed wetting agents, surface active agents and surfactants, have cut deeply into the detergent functions of soap. The advantages of synthetics over soap are several. Among these are their efficiency in hard waters, detergent usefulness in acid media, faster wetting power, better penetration of porous materials, thorough rinsing and improved cleansing power. It must be remembered in selecting a wetting agent that not all of them possess detergent power. They are classified by other uses such as foaming, dispersing, penetrating, wetting and emulsifying agents. As a result, not all wetting agents are good detergents.

A question regarding these synthetic detergents which has been frequently asked by non-technical men is the meaning of the terms, anionic, cationic and non-ionic products. To describe these terms in everyday language is not too easy, but the following description may help. Certain chemicals when in suitable solutions, like common salt in water, for example, will conduct an electric current. In doing so, they are broken down into two parts or ions. One of these ions carries a negative charge of electricity and migrates to the positive

FORMULAE

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pole or anode. This is termed an anionic particle. The other charge is attracted by the negative pole or cathode because it has a positive charge and is a cationic particle. In other cases, some chemicals will not break apart under an electric impulse or ionize, like a starch solution, for example. These are called non-ionic.

In selecting a synthetic detergent, other points are also of interest. The first is cost. In deciding upon a detergent the actual active percentage should be carefully considered. Very few of them are 100 per cent active but contain cheap salts like common salt or sodium sulfate for solid types, and water or isopropanol in liquid products. The more costly, then, may still be the cheaper. Lists are available which give not only the active ingredient content* but also the properties and composition of synthetic detergents. Another point is compatibility with other ingredients. Soap and wetting agents do not always augment detergent performance, for example. In other cases, it has been found that some synthetics are hygroscopic and in compounding the finished mixed detergent, troublesome caking occurs.

Wetting agents at first found wide application in the textile industry. Their use in general detergents was a later development. They were discovered by the Germans and the earliest ones used commercially were the alcohol sulfates made from a neutral fat or glyceride, particularly laurin. Coined, trade-marked names are used to designate various strengths of synthetics. The correct chemical name of the C_{12} or lauryl alcohol sulfate is sodium lauryl sulfate. "Gardinol" and "Orvus" are two well-known trade marked products of this type. Due to high cost, the lauryl alcohol sulfates have been largely replaced by the alkyl aryl sulfonates. These are cheaper and easier to produce. They comprise the majority of synthetic detergents consumed and are readily made from petroleum and ring structure compounds. Non-ionic detergents made from ethylene oxide and an oil soluble molecule have enjoyed increased consumption recently. These are liquid products which are finding considerable favor in liquid detergents for dishwashing and other industrial cleansers. They may be used with soap. A recent reduction in their cost has been very acceptable.

In the main, it may be said that finished synthetic type cleansers, made with these chemicals and builders, may embody the principles used in making up cleansers with powdered or liquid soaps.

In considering the organic compounds used in detergents, we list the quaternaries and phenolic compounds, sodium carboxy methyl cellulose (CMC), the polyamino acids sodium salts or chelating agents, and the optical bleaches.

The quaternaries or quaternary ammonium compounds are also called cationic detergents. Oftentimes they are classed as wetting agents. A large number of these are available. In the sanitary supply industry their largest use is not as synthetic detergents but as rinses to replace chlorine rinses in dishwashing operations. From this use it is readily deduced that they possess germicidal value. Since quaternaries are cationic, they are not compatible with soap and must be mixed with cationic or non-ionic detergents. It has been determined, however, that it is not readily possible to predict the end results for the efficacy of these so-called detergent-sanitizers. The term "sanitizer" has been used frequently in detergent literature in recent years. It implies that in addition to removing soil or dirt the product also disinfects. This disinfection or bactericidal power is open to dispute. Some authorities insist that no live bacteria should remain on surfaces treated with these products, whereas others suggest a high percentage kill. The washing activity of detergent-sanitizers may either be improved by the addition of comparatively small quantities of quaternaries that show no detergent properties by themselves or their addition may reduce the detergent power considerably. It is necessary to actually run tests to evaluate their usefulness as detergents as well as sanitizers.

More recently, sanitizer-cleaners based on the addition of phenolic bodies, especially chloro benzyl phenol ("Santophen 1")* have enjoyed much popularity, especially as rug cleaners. These liquid detergents generally consist of coconut oil liquid soaps to which the phenol is added or a synthetic detergent solution with the phenol added.

Sodium carboxy-methyl cellulose, termed CMC, comes as a grayish white powder that forms a thick, viscous, colloidal solution in water. It has some value for increasing the cleansing efficiency of detergents that contain soap. Its main value, however, is for preventing the re-deposition of soil when used in synthetic detergent mixtures. It possesses little detergent action by itself but is employed in large quantities in synthetic detergents for home use.

The sodium salts of the polyamino acids, marketed commercially under various trade names as "Versene," "Sequestrene," and "Nullapon," have come to the fore rapidly, especially for use in liquid soaps. Both concentrated powders or solutions are available. When first introduced they were called water softening compounds. More recently the term "chelating" agent has been applied to describe their action. I have often been asked to define the term "chelating." As far as I can determine, it comes from the term "chela" or the definition for pincerlike organs of certain animals like the lobster's claw. This organ is prehensile, that is to say it is adapted to seizing or wrapping itself around objects. This is a good illustration of the action of chelating agents. Chelating agents seize the metallic ions, like calcium and magnesium, as well as iron, copper, etc., in hard waters, and form complex, soluble compounds that do not interfere with the action of soap nor form clouding insoluble salts in liquid soaps. Very small quantities (about 3 parts per thousand on dry basis) are sufficient. Their main value, then, in detergents is to prevent hard waters from interfering with soap activity or other cleansers like machine hard water dishwashing compounds, and to improve

* See "Soaps & Detergents" pp. 490-501.

* Monsanto Chemical Co., St. Louis.

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the appearance of liquid soaps by preventing clouding or precipitation of insoluble soaps. They are better water softeners than the polyphosphates.

The action of optical bleaches is similar to that of bluing. They really are not detergents, but merely produce an illusion of cleanliness by whitening the appearance of fabrics, particularly, by neutralizing the yellowish tints. Unlike chlorine bleaching agents, the strength of fibers is not impaired.

Other products used in cleansers include pine oil and bentonite. Pine oil is a favorite addition to scrub soaps. It thickens low soap percentage potash soaps, increases their dissolving power for certain types of soil, renders them more transparent and leaves behind an odor associated by many with cleanliness. Bentonite is a colloidal clay that is often added to solid and powdered soaps, the detergency of which is increased during the use of such soaps. Bentonite, when added to water in small quantities, being a colloid, swells and becomes pasty. In this form it possesses emulsifying and adsorptive powers that increase cleansing power.

With this array of older and newer detergent raw materials, the future is very sure to put the emphasis on better and easier cleansing in many directions. Further advances are in the offing through the use of radioactive tracer elements to follow the course of soil removal and the use of supersonic vibrations to remove undesirable dirt from various surfaces.

Lined Tanks

The Heil Process Equipment Co., of Cleveland (11), feature a service that fits tank linings to chemical processing equipment. Among the linings they use are included lead, ceramic, glass, thermoplastic materials, synthetic rubber and vinyl plastics. They also fabricate tanks from noncorrosive metals like Monel, stainless steel and copper.

Processing Pumps

A line of rotary pumps in capacities from 5 to 150 G.P.M. that efficiently handle chemicals, solvents, tallow, soap and many abrasive materials is offered by Waterous Co., St. Paul (1). These pumps are self-priming, give constant delivery, contain no absorbent packings and are designed for easy flushing and cleaning. The large rotor chambers permit the handling of semi-solids and pulpy materials without jamming or crushing. Nonlubricating products are pumped efficiently. Easy installation is possible through dual size ports. The company also produces sanitary pumps that have had ready reception for handling of food products.

Industrial Gloves

The industrial gloves made by Surety Rubber Co., Carrollton, Ohio, from synthetic rubber are claimed to be exceptionally high in abrasion resistance. They also resist chemicals longer and do not snag. The makers claim lower cost, better hand protection is obtained through their use.

Efficient Mop

Natural products like sponges and cleaning fibres are being constantly replaced by synthetic materials. The American Standard Manufacturing Co., Chicago (8), Illinois, are offering a new, efficient mop that is made from spun cellulose, a new mop yarn. The maker claims this mop to be of superior performance to any wet mop on the market. It performs more rapidly, lasts longer and is low in cost. Among its desirable properties are ruggedness, high water absorbing ability and easy rinsibility. A sample of the yarn with specifications may be had upon writing to the company.

D & O Revise Price List

Dodge & Olcott, Inc., New York, have issued their October, 1950 edition of their catalog and price list. All prices in the catalog have been revised to new basic sales terms of net 30 days (without discount).

New Antioxidant Bulletin

American Cyanamid Co., New York, announced recently the availability of new product bulletin No. 16, which describes properties and uses of antioxidant 2246. This product was recently introduced as a hindered phenol type antioxidant. The product is 2,2′-methylene bis (4-methyl-6-*tert*-butylphenol) and is supplied as a pale cream to white crystalline solid, with a melting point range of 120-130°C.

New "BTC" Coater

Potdevin Machine Co., Brooklyn, recently developed a multi-purpose coating attachment for underside and top web coating. The new machine, known as the "BTC," is fitted with special brackets permitting mounting in any position. The "BTC" is particularly suited for applying adhesives in widths up to 21 inches to webs running at any speed. It can be either self-powered or powered by other equipment.

Grinding Equipment Data

U. S. Stoneware Co., Akron, issued a new bulletin describing their grinding and mixing equipment. This new bulletin, number 265, has illustrations, and specifications are presented in chart form.

Book on Indust. Chems.

Industrial Chemicals by W. L. Faith, Donald B. Keyes and Ronald L. Clark. Published by John Wiley & Sons, Inc., New York. 652 pages, 6 x 9 inches, cloth binding, price $8.00.

Essential technical and economic data for 106 major commercial chemicals are compiled in this text. Each chemical is discussed separately, covering: the name and chemical formula; manufacturing processes in current use; equations for the principal reactions involved and average yield expectations; raw material requirements; production and price charts for the past 20 years; general use table; miscellaneous data including physical properties, commercial grades, shipping regulations; and economic aspects.

Among the compounds covered in the book are: the alkylamines, benzaldehyde, benzene, carbon black, chloral, chlorine, chlorobenzene and dichlorobenzene, cresol, DDT, 2,4-D, ethylene dichloride, furfural, glycerine, lime, hydrochloric acid, naphthalene, phenol, sodium, sodium carbonate, sodium chlorate, sodium hydroxide, sodium phosphate, sodium silicate and sulfuric acid.

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PRODUCTS AND PROCESSES

Alanine Detergents

Condensation products of amino and fatty acids have been found to have good detergent properties, and are stronger acids than the fatty acids, so that their sodium salts can exist at lower pH values than soap. N-palmitylalanine is prepared by combining alanine and palmityl chloride in a sodium hydroxide solution. N-laurylalanine, N-palmitylserine and N-laurylserine are prepared in a similar manner. *Bull. soc. chim. France* 356-61 (1950).

◆

Metal and Glass Polish

A preparation for cleaning silver, gold, copper, glassware, chromium and nickel plate, contains 70 parts of slate, 14 parts of calcium sulfate, 15 parts of calcium carbonate, and one part of ferric oxide. Brit. Pat. 590,264.

◆

Magnesium Bleach

Magnesium hypochlorite, prepared by treating gelatinous magnesium hydroxide with chlorine gas, is found to have good bleaching properties, and is suitable for household use. The magnesium is prepared by treating a magnesium sulfate solution with sodium hydroxide. Fr. Pat. 940,754 through *Chem. Abstracts.*

◆

Varnish Remover

A paste product for removing varnish is prepared by combining five parts of mixture A (presented below) with 28 parts of mixture B, 25 parts sodium hydroxide, four parts calcium hydroxide, 45 parts talc and 50 parts of water.

A	
rosin	3 grams
beeswax	2 grams
mineral oil	10 grams
potassium hydroxide	1 gram
water	20 grams
B	
acetone	5 grams
carbon tetrachloride	10 grams
turpentine	2 grams
benzene	4 grams
turpentine oil	3 grams
amyl acetate	2 grams

The ingredients of mixture A are combined and blended on a steam bath, while those of mixture B are combined at room temperature. Ital. Pat. 441,063 through *Chem. Abstracts.*

◆

Continuous Soap Purifying

A continuous method for purifying soap consists of passing the soap through a tower counter-current to a weak salt solution. As the soap gets to the top of the tower, boiling water is added and the mixture passed into a vat. The purified soap is decanted from the top of the vat, and the impurities removed at the bottom. French Pat. 941,844, through *Chem. Abstracts.*

◆

Tall Oil Soap Tests

Detergency and foaming power tests run on a number of soaps made from tall oil indicate that tall oil soap has a higher value than sodium rosinate; sodium oleate is better than tall oil fatty-acid soap; both tall-oil resin acid soap and rosin soap have low detergency on cotton. Tall oil soap without unsaponifiables is about equal to a corresponding mixture of sodium oleate and sodium rosinate. Tall oil soap is also somewhat less sensitive to hard water than sodium oleate. *J. Am. Chem. Soc.* 27, No. 8 289-295 (1950).

◆

Glycerin Toxicity Study

No difference has been shown between the toxicity of natural and synthetic glycerin, following intravenous and oral administrations to albino mice. Rats receiving five per cent glycerin (natural and synthetic) as drinking water for six months, gained weight comparable to controls. No change was found in the hematopoietic system, although a mild damage to the kidneys occurred with glycerin from both sources. No other visceral damage was apparent. R. C. Anderson, P. Harris, K. K. Chin, *J. Am. Pharm. Assoc.* 39, No. 10,583-585 (1950).

◆

Insect Repellent Cream

A formula for a midge-repellent cream utilizes dimethyl phthalate as the active ingredient. The preparation is claimed to be harmless to the skin, but a warning is given not to let the cream come into contact with tortoise shell or plastic items. The product contains 67 per cent of the phthalate gelled with a mixture of ten per cent magnesium stearate and 23 per cent zinc stearate. *Manuf. Chem.* 21, No. 10, 437.

Detergents for Type

(*From Page* 45)

for use.

8. Synthetic detergents are non-toxic and non-inflammable and there is, therefore, no necessity to take extra precautions when using them in the factory.

Precautions With Detergents

THERE are certain precautions which need to be taken to insure success with synthetic detergents to be used for cleaning type. First of all, the right one must be selected. It is not sufficient to choose just any anionic agent, or indeed any sodium alkyl sulphate. There is such a thing as balance; that is, the balance of hydrophobic and hydrophilic properties of the molecule. The most efficient cleansing agent is made up of a selected range of higher alkyl sulphates of different chain lengths, so providing for a product of optimum balance. Of importance also is the concentration of the solution ready for use. No advantage is obtained by employing too strong a solution as the outstanding property of an efficient synthetic is its ability to reduce effectively the forces operating at surfaces or interfaces at very low concentrations. Rinsing of all cleansed type and blocks should never be omitted as the presence of the detergent on the type face will prevent the ink from drying properly, and thus give a smeared and unsatisfactory impression.

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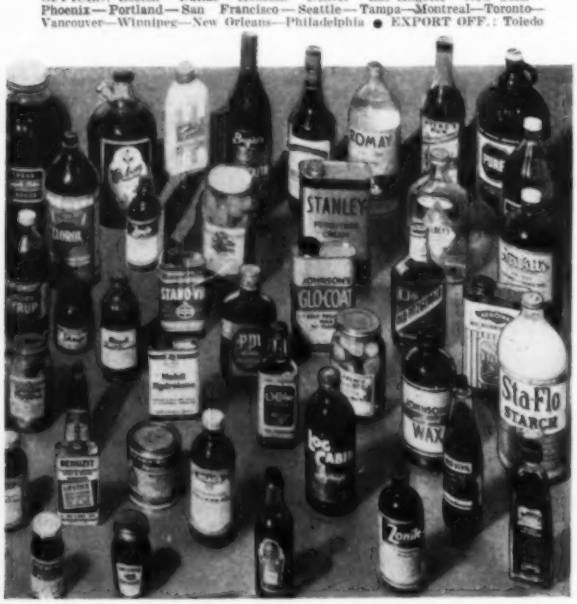

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● *Is distillation of stearic acid enough?*

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SOAP PLANT OBSERVER

By John W. McCutcheon

ON a recent trip to the West coast, it was my privilege to visit the plant of a large processor of sardine oils. One of the problems of the industry is that sardines, instead of following their usual yearly trek, suddenly have altered their course and have gone elsewhere. Just where, is a matter of deep concern and continues to be the subject of one of the most extensive boat and plane hunts in history. As far as the writer could gather, it had never happened before. On top of all this, the oil processors are very anxious to sell what oil they have in the premium market. Here the highly unsaturated constituents can be put to work and not destroyed as they would be if converted to a soap raw material. This is indeed a far cry from twenty to thirty years ago when the conversion of marine oils to a suitable soap stock was considered the pinnacle of success and was priced accordingly. The change is due to the advancing state of oil technology plus greater requirements for the unsaturated acids in all types of products. In particular, it is due to the easy removal of the saturated acids, to dimerizing and polymerizing reactions within the molecular structure and to oxidation triggerization of such reaction products by ester formation.

The hydrogenation of sardine oil lowers its iodine value to that of tallow instead of raising it to that of linseed oil. The effect of this is to diminish somewhat the competitive position of marine oils as soap making materials, a fact which will be music to the ears of the renderer. This same type of technological advance has also affected the vast soya bean oil industry.

In the beginning, the high linoleic acid content of sardine oil was a stumbling block in its use both for shortening and soap. Proper hydrogenation has solved the major difficulties in this respect by conversion of this mal-behaving acid to iso-oleic and other acids. Nature went to a lot of

bother to provide this unsaturated acid, and chemists reasoned that it deserved something more befitting than complete destruction. Purification, dimerization and polymerization seemed to be the answer, and at the present time large quantities of this oil are flowing into such industries as plastics, paints and varnishes, etc. The net effect of this has been the withdrawal of a part of this oil from edible and soap uses and permitting larger amounts of lard and tallow to be used. It would appear, therefore, that tallow renderers again stand to have some of their original markets handed back to them merely by sitting on their hands. It is a pleasant experience, of course.

But to return to the main thread of thought: marine oils and their use in soaps. Marine oils are still used in soap, although their importance for this purpose has declined considerably. To clear away some of the confusion known to exist regarding their use in soap, we have decided to consider them in some detail.

The fish oils contain extra long chain fatty acids including C_{20} and C_{22} acids which are in the main highly unsaturated and subject to rapid oxidation and rancidity. Soaps from these acids have good solubility but lack detergent power, discolor quickly and have a fishy odor. Raw marine oil is not a suitable material, therefore, for making any but the very lowest grades of soap.

However, if the oils are partially hydrogenated say to an iodine value of 65-75, which is below that of oleic acid, the majority of these highly unsaturated acids will have been converted to stable C_{20}, C_{22} and C_{24} saturated acids or to iso-oleic acids which are not subject to such rapid decomposition and rancidity. The product is a rather high melting point plastic fat material, quite suitable as a substitute for tallow in the kettle charge if the following points are considered.

First, the proportion of long chain saturated acids makes the soaps derived from them very much more insoluble than soaps derived from tallow, so that the detergency is inferior to tallow soaps except at temperatures 10 to 20° above normal laundry operations. Secondly, the very presence of these long chain acids improves the mildness of the soap in contact with the skin due to decrease in ionization with increase in chain length. Thirdly, the presence of iso-oleic acids, some of which may be solid, plus small amounts of the more highly unsaturated ones, will tend to give the soap a slight fishy odor which is passed on to the laundered goods when they are placed under the iron. Also the soap may darken on ageing. If hydrogenation is not carried far enough, the characteristics under the third point above will be enhanced. If hydrogenation is carried much beyond the point noted, stability is improved at the expense of detergency, because of the conversion of iso-oleic acids to saturated ones. These iso acids are desirable as, in themselves, they are good detergents. Fourthly, the presence of considerable quantities of these long chain saturated acids and solid iso-oleic acids will decrease the ability of the soap to hold such builders as sodium silicate. Therefore, the addition of 10 or 20 per cent hydrogenated fish oils in a bar soap formula may require careful adjust-

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ment of the crutcher formula to avoid bar soap cracking, wet spots, etc. Nevertheless, fish oil is a very satisfactory raw material for soap use when it is available.

In the U. S. A. at the present time, fish oils do not play as important a role in soapmaking as they did fifteen years ago for two reasons. One is the limited availability due to war conditions and the other is that new processing methods have pushed the price of fish oil beyond the soap maker's range.

* * *

SPRAY drying of soaps and detergents is one of the most important phases of the soap business today. There is hardly a soaper anywhere in the U. S. who has not either built a tower of his own or given it serious thought. This interest in spray drying of soap is world wide.

The writer has seen towers built of everything from stainless steel to fire resistant asbestos board. What are the reasons behind the popularity of spray drying? For one thing, spray drying is the cheapest way to obtain a soap product in powder form. But more important still, it can result in a product which is more free flowing and dust free than is possible with any type of grinding and sifting. For the ultimate in grinding technology one is referred to an article by E. T. Webb reviewed in the October 1925 issue of Soap. About five different methods are given. Since that time, soap powders have gradually advanced in sale at the expense of bar soaps due no doubt to the greater ease in handling and to the greater versatility afforded in formulation. How could a bar of soap be made to contain 50 per cent sodium tripolyphosphate?

In addition to the ground gained in spray drying by soap a tremendous lift to powders has been given by the growth of synthetic detergents, automatic clothes washing machines and automatic dishwashers. As one synthetic soap manufacturer recently said, — "We figure retail powder sales of close to 1.4 billion pounds at present and if we don't get 80 per cent the soap and synthetic detergent powder business we will be disappointed." Apparently soaps (not soapers) can have 20 per cent of the powder business, all the diminishing laundry bar business and perhaps the toilet soaps. At any rate, powdered products are the largest selling form of detergents at the present time and the spray tower is the most popular way to make them. (To be cont'd. next month).

—— ♦ ——

Evans Research Brochure

A concise, four-page brochure that details the specific fields of research in which it operates was announced recently by Evans Research & Development Corp., New York. Copies are available on request.

—— ♦ ——

New Emery Products

The availability of a new descriptive bulletin covering two new products, 12-hydroxystearic acid and hydrogenated castor oil, was announced recently by Emery Industries, Inc., Cincinnati. The booklet contains complete specifications, physical properties and typical characteristics of each. Also covered are typical uses, and suggested applications based on preliminary experimentation. There is also a complete bibliography for each. The bulletin is available on request.

—— ♦ ——

New Sterling Motor Design

The availability of their "Slo-Speed Geared Electric Power Drives" in single phase, capacitator design was announced recently by Sterling Electric Motors, Inc., Los Angeles. The new single phase gear-head motors are built with single or double reduction gears, providing speeds from 780 r.p.m. down to 30 r.p.m., in ratings of ½ h.p. to 3 h.p., inclusive, according to the announcement. In addition, they utilize a newly designed starting relay that eliminates the need for centrifugal switches or any rotating devices such as throw-out switches, commutators, brushes, etc.

—— ♦ ——

New Essential Oils Vol.

Essential Oils, Volume IV, by Ernest Guenther. Published by D. Van Nostrand Co., New York. 752 pages, 6 x 9 inches, cloth binding, price $12.00.

Monographs on the individual essential oils of the plant families *Gramineae, Lauraceae, Burseraceae, Myrtaceae, Umbelliferae,* and *Geraniaceae* make up the fourth volume of this series on the essential oils. As in the previous volumes, information included in the monographs covers: geographical and botanical origins, growing and harvesting of the plant material, methods of distilling and extracting, physicochemical properties of the oil, adulteration and its detection, chemical composition and use. References to additional literature append the various sections. Forty illustrations of equipment, plants and processing operations are included in the text.

—— ♦ ——

Watermulder Leaves Lever

Louis F. Watermulder, an administrative vice-president of Lever Brothers Co., New York, was elected recently as a director and vice-president of W. R. Grace & Co., New York. He takes up his new duties early in 1951.

Metal Cleaning Products

(*From Page 73*)

Due to the extensive use of methacrylates in windows of planes, cresols are limited in use around the upper sections of planes, to eliminate "crazing". Other materials which must be kept away from methacrylates are lacquers and their thinners, carbon tetrachloride, alcohols, certain waxes and insect fumigant sprays, toluene, or any other material containing aromatic type compounds.

Coated surfaces alter the cleaning problem, particularly if the solvent emulsions have a dissolving power for the paint. In such cases, the emulsions are used only for the uncoated surfaces, while detergents are used for the coated areas. One airline has a policy of avoiding coatings for corrosion prevention, based on its experience that a clean and dry airplane will not corrode. This airline uses coatings primarily for identification markings, and where corrosion results from the action of acids, as are encountered around the battery compartments, etc. *Chem. Eng'g. News* 28, No. 46, 3964-65 (1950).

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NEW PATENTS

The information below is furnished by patent law offices of

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The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50c for each copy desired. They will be pleased to give you free preliminary patent advice.

No. 2,521,742. Method of Treating Low-Grade Fatty Materials, patented by William J. Paterson, Newton Highlands, Mass., assignor to Lever Brothers Company, Cambridge, Mass., a corporation of Maine. The patent covers a method of preparing lower alkyl esters of fatty acids which comprises treating fatty stock containing free fatty acids, with vapor of a lower alkanol at a temperature above about 150° C. and below decomposition temperatures of the alkanol in the presence of an insoluble inorganic oxygenated material as catalyst, the by-product water formed in the esterification reaction being removed as formed, and said temperature being above the boiling temperature of the lower alkanol at the pressure employed.

No. 2,519,841. Detergent Briquette, patented by James Douglas MacMahon, Niagara Falls, N. Y., assignor to Mathieson Chemical Corp., a corporation of Virginia. A detergent briquette of the type which is physically stable, hard, strong and non-deliquescent, and consisting of a dense crystalline aggregate consists essentially of the following ingredients which are listed in proportions by weight within the respective indicated ranges: total water 30-50 per cent, at least one detergent of the group consisting of sodium carbonate and trisodium phosphate aggregating from about one-tenth to about one-half the total formula weight, and at least one polyphosphate of the group consisting of tetrasodium pyrophosphate, sodium tripolyphosphate, sodium tetraphosphate and sodium hexametaphosphate, aggregating about 5-50 per cent but not exceeding about 15 per cent of sodium tetraphosphate and sodium hexametaphosphate, a briquette having said physical characteristics and said chemical composition further containing a quaternary ammonium compound containing an alkyl radical of not less than 8 carbon atoms in an amount within the range of about 0.2 per cent to about 10 per cent on the total weight of the briquette.

No. 2,522,446. Detergent Compositions, patented by Jay C. Harris, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo., a corporation of Delaware. A detergent composition is described consisting per 100 parts thereof, of the following ingredients in parts by weight:

	Parts
Condensation product of a tertiary mercaptan with 6-20 carbon atoms with from 5 to 20 moles of ethylene oxide	

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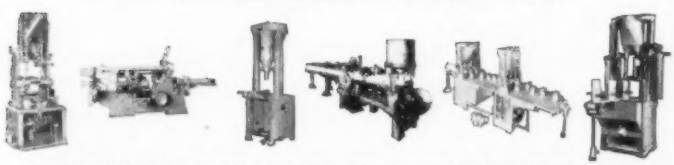

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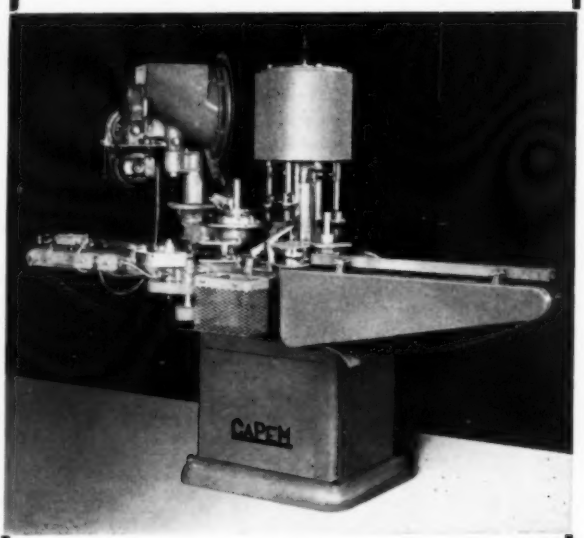

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Sodium silicate, $Na_2O : SiO_2$ ratio of 1:2 to 1:3.2.....	10–25
Starch	0-20
Alkaline material selected from the class consisting of sodium carbonate and sodium bicarbonate and mixtures thereof.	10-25
Carboxy methyl cellulose.....	0.5- 5

No. 2,522,447. Detergent Compositions, patented by Jay C. Harris, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo., a corporation of Delaware. The patent covers a detergent composition consisting of 100 parts thereof, of the following ingredients in parts by weight:

	Parts
Condensation product of a tertiary alkyl phenol having from 8-9 carbon atoms in the alkyl chain with from 5-20 moles of ethylene oxide per mole of said phenol.....	15-25
A sodium phosphate selected from the class consisting of tetrasodium pyrophosphate and sodium tripolyphosphate	20-60
Sodium silicate, $Na_2O : SiO_2$ ratio=1:2 to 2:3.2.....	10-25
Starch	0-20
Alkaline material selected from the class consisting of sodium carbonate, sodium bicarbonate and mixtures thereof...	10-25
Carboxy methyl cellulose.....	0.5– 5

No. 2,523,420. Benzene Hexachloride Insecticide with Water Repellent Powdered Vehicle, patented by Leslie James Burrage, Liverpool, England, assignor to Imperial Chemical Industries Limited, a corporation of Great Britain. A dust-like water-repellent pest control composition is patented comprising crude benzene hexachloride containing the gamma isomer, said benzene hexachloride being in intimate admixture with a non-alkaline water-insoluble solid diluent in powder form which has been rendered water repellent by coating the particles of said diluent with an oleaginous material.

No. 2,519,665. Dentifrice, patented by Andrew August Klippert, Hollis, N. Y., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J., a corporation of Delaware. A dentifrice tooth powder containing as a flavor imparting ingredient, an alkali metal salt of methyl salicylate is described in the patent.

No. 2,520,425. Continuous Hydrogenation of Unsaturated Oils, patented by Victor Mills, Cincinnati, Ohio, assignor to Procter and Gamble Co., Ivorydale, Ohio, a corporation of Ohio. The patent covers the continuous process of partially hydrogenating unsaturated fatty acids and esters thereof to a desired endpoint, which comprises: (1) continuously flowing the unsaturated material at a known rate into, through, and out of a confined hydrogenation zone, said zone containing a highly active hydrogenation catalyst, at about 100° C. to about 250° C. temperature, (2) continuously metering hydrogen into said zone at a gauge pressure between about 20 and about 500 pounds per square inch and in amount stoichiometrically proportioned to the desired reduction in the iodine value of the inflowing unsaturated material (upon reaction therewith), and (3) mechanically inducing violent and turbulent agitation within said zone to effect contact of said material and said hydrogen simultaneously with said catalyst, thereby causing hydrogenation of said material to proceed at a rapid rate; the flow of said material into and through said zone being effected at a rate permitting the desired reduction in iodine value and substantially complete utilization of hydrogen

(*Turn to Page* 145)

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Dish Detergents

(*From Page 39*)

Soda ash, anhydrous	80

The first two products are granular, the third is a briquet; in order to obtain this form, the salts have been fused. These formulas are more or less representative of dishwashing detergents which have been on the market for some years and have undergone little change in formulation. Some products are changed in composition from time to time even though continuing under the same name. A tendency in the household-detergent field is to label an improved product "New -".

The simplest and cheapest "detergents" sold are not even mixtures. For example, one product consists solely of sodium sesquicarbonate, another solely of trisodium phosphate, and still another of sodium metasilicate.

Commercial products containing synthetic detergents are illustrated by the following:

	%
4. Trisodium phosphate	46
Sodium silicate pentahydrate	6
Built sulfonated synthetic detergent	5
Soda ash	3
Water of hydration	40
pH of 1% solution 12.4	
5. Trisodium phosphate dodecahydrate	20
Sodium silicate	24
Soda ash	17
Sodium bicarbonate	28
Sodium chloride	1
Sulfonated synthetic detergent	1
Water of hydration	9
6. Trisodium phosphate dodecahydrate	30
Soda ash	7
Sodium metasilicate pentahydrate	52
Tetrasodium pyrophosphate	10
Synthetic detergent	1
7. Trisodium phosphate, hydrated	23
Sodium metasilicate	1
Sulfonated fatty amide	6
Water	70

Product No. 4 has somewhat too high a pH value, which could be adjusted by use of less trisodium phosphate and replacement of some of this by a molecularly dehydrated phosphate. In No. 5, the pH value is not reported, but the high proportion of sodium bicarbonate would tend to buffer the solution at a rather low pH, probably undesirably low. In Nos. 5 and 6, the proportion of synthetic detergent would be desirably increased to 3-5 per cent, instead of containing only enough to christen it. Product No. 7 is a liquid and may be designed to correspond as a mechanical dishwashing compound to "Glim" as a household dishwashing product. This form of synthetic detergent is high in dispersing power, as synthetics go.

One more example, drawn from patent sources[6] rather than analyses, is as follows:

	Parts
8. Soda ash	45
Tetrasodium pyrophosphate	45
Nona-ethylene glycol mono-ester of soybean fatty acids	6.3
Oleyl dimethyl ethyl ammonium bromide	3

The patented product illustrates the idea of combining a nonionic synthetic detergent with a quaternary ammonium compound to give a product having both good detergency and possible bacteriostatic action. The only question about the efficacy of this would be possible precipitation of the quaternary compound by soap formed by the reaction alkalinity from the soda ash, with food fats and fatty acids. Only bacteriological examination of the actual wash liquor in use, or of the washed dishes compared with controls, would determine the sanitizing power of the product.

That nonionic agents will prove useful in high-quality mechanical dishwashing detergents is strongly indicated. That the detergent can at the same time be made an effective "sanitizer" by use of a quaternary ammonium compound has not been well established, so far as our knowledge of published results go. As a research problem, this seems a possibility. Only research results will prove it.

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5. L. W. Gilcreas and J. D. O'Brien, Am. J. Public Health *31*, 143-50 (1941).
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"Pears" Soap Promotion

A new promotion campaign designed to widen the market for "Pears Soap," made by Lever Brothers and Unilever Ltd., England, was announced recently by Ronald Helps, vice-president of Schieffelin & Co., New York, importers and distributors of the soap in the U. S. The new campaign will concentrate on teen-age consumers. Since the end of World War II, when "Pears Soap" was re-introduced on the American market after an absence of nine years, advertising and publicity stressed the "selling nostalgia" to those who remembered the soap from their childhood.

Chi. Cos. Chemists Meet

The final meeting of the year of the Chicago Chapter of the Society of Cosmetic Chemists was held on Tuesday, November 14th at Henrici's Restaurant in the Merchandise Mart.

The speakers of the evening were Gene Rose, George Barr & Co., Chicago, who discussed "Stability Testing of Aerosol Products," and Gus Kass, Helene Curtis Industries, Chicago, who discussed "Stability Testing of Hair Preparations such as Cold Permanent Waves, Hair Dyes, and Shampoos."

New Dreyer Chicago Rep.

P. R. Dreyer, Inc., New York, recently announced that Frank R. Steel has been appointed special sales representative in Chicago and surrounding territory to succeed its former representative William H. Schutte Co. of Chicago. The Schutte company is now devoting its entire efforts to its line of chemicals, perfumers' raw materials and specialties.

Report Award to C-P-P

Colgate - Palmolive - Peet Co., Jersey City won a bronze "Oscar of Industry" award for having one of the best annual reports of the drug industry in the 1949 survey conducted by the *Financial World*, it was announced recently.

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Kranich standard soaps are manufactured and produced entirely in our own factory. All soaps are manufactured from fatty acids distilled and vegetable oils refined by us. All alkalies are dissolved and settled to remove impurities. All soaps are HEAVY METAL free (new technique).

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Potash Vegetable Oil
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Powdered Coconut Oil 98%
(For Detergent Compounding)

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"WHEN IT SMELLS BETTER—IT WILL SELL BETTER!"

. . . and that applies to your products, whether they be

INSECT SPRAYS, of any type
AEROSOLS
PARA and NAPHTHA BLOCKS
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THEATRE SPRAYS
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Felton chemists, with a wealth of research and experience in Industrial Aromatics and Deodorizing Agents, can supply you with the perfect reodorants or neutralizers for your products. All you have to do is *send us a sample of what you make*—so that we can make careful, individualized study of your requirements.

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MGK Allethrin

IN AEROSOLS

Plan to *increase* your sales of aerosols in 1951 despite the short supply and higher price of pyrethrin. Use MGK Allethrin, "264" and DDT alone, or in combination with the famous Pyrocide 175, and make savings as high as 3¢ per bomb in your costs while maintaining top quality, high volume of production and sales to increase your 1951 profits sharply.

Improved quality and reduced cost can *both* be accomplished with MGK Allethrin.

Most aerosols now contain pyrethrins, DDT, synergist, solvents and propellants. By substituting MGK Allethrin for part of the pyrethrins and by using a suitable synergist, such as MGK "264" which works equally well with both pyrethrin and allethrin, quality and cost both can be improved. A few formulations are recommended which contain MGK Allethrin substituted entirely for pyrethrin and these can be advertised as entirely synthetic, and of completely domestic origin. All of these formulations containing MGK Allethrin have been under test by independent laboratories for more than a year. All either exceed, or at least equal, the TOTA standard and the pyrethrin-containing commercial aerosols with which they have been compared as to knockdown and killing power. Better results on cockroaches are an outstanding feature of aerosols containing MGK "264".

Extensive biological reports are available to you to show performance of many combinations of these toxicants. Better yet, federal approval under Patent No. 2321023 has already been obtained for several formulations.

We offer completed formulations ready for aerosol packing, for those who wish to do the minimum of processing. And, for those who find advantage in processing a portion, we offer intermediate formulations containing the toxicants and synergists. For those who prefer to do all the processing, we furnish separate toxicants which are the purest on the market.

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9,273,366 sales calls a year

basic advantages of Pyrenone-type insecticides.

Add to this the editorial attention Pyrenones have received—in Collier's, in the Farm Journal, in Progressive Farmer, in state farm papers, in weekly news magazines, in newspapers, and in trade magazines. We believe you can see why we feel, in all sincerity, that we are "in your corner" helping to make *your* selling job easier, more profitable.

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Pity the poor fly spray that offends with *Basic Ingredient Odor! The housewife eschews it, the purchasing agent passes it by in favor of the insecticide with a refreshing, *pleasing* fragrance. To impart just such a pleasant, sales-appealing scent is the sole and *exclusive* purpose of MM&R DEODOR-SCENTS. This large family of powerful neutralizer-perfumes has proved its extraordinary efficiency and economy to exacting manufacturers the country over. Whether you wish to neutralize *without* perfuming . . . or to do *both* with one product . . . there's an MM&R DEODOR-SCENT that will supply the perfect answer to your needs. For quick proof, send us your unperfumed spray and an indication of your perfuming budget. Deodor-scented samples will be returned promptly without obligation.

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For details of the "Boston Round" story, call the O-I branch office near you.

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Every month more products join these fast sellers on the the aerosol markets:

- Space insecticide (for flies, mosquitoes, wasps)
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- Mothproofer (Mothicide)
- Residual spray (for crawling insects as roaches, ants, spiders)
- Space deodorant
- Anti-persp
- Mold pre
- Plastic
- Auto
- Fur
- P
- W
- ing Benzoin or Ephedrine)
- atment preparations (containing
- cid)
- ld lubricant (containing silicone)
- zing agents
- ape removers
- eodorants
- oaps (such as shampoo)
- g oils (to allay dust)
- g spray
- Rust preventive
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Sales of aerosol-dispensed products are at a record high. And you can easily take advantage of the enthusiastic reception customers are giving aerosols by planning to place your product on the aerosol market now!

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IT'S EASY TO GET INTO

You'll find it easy to have a small quantity of your product packaged for an effective and economical sales test. But whether you decide on a test or plan to go ahead with production, be sure to keep in mind the importance of safe, dependable propellents.

YOU KNOW IT'S SAFE WHEN YOU USE "FREON"

You can be sure of safe, dependable performance from your aerosol products when you select "Freon" propellents. These propellents are nonflammable, nonexplosive, of extremely low order toxicity . . . harmless to foods, furs, flesh, fabrics and finishes. They have no color or taste and are practically odorless.

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Plan to aerosol-package your product today!

Here's how to go about it:

1. **Determine that there is a market for the contemplated product.**
2. **Develop a stable formulation, including propellent, which can be packaged in a suitable container.**
3. **Shelf-test the proposed finished-product package before production or sample merchandising is attempted.**
4. **Have a quantity packaged for test marketing. There are custom loaders who will fill quantities as low as 5,000.**

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As a service to users of "Freon" propellents, Du Pont is ready to assist any manufacturer in entering the aerosol market. This includes aid at every step from market exploration to planning shelf-testing and interpretation of the results.

If you are thinking of entering the aerosol market, be sure to find out how "Kinetic" can be of real help. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Delaware.

ANNUAL MEETING OF C.S.M.A.
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Boiling Point	173° C
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Rax, containing warfarin*, (WARF Compound 42), came out of the Wisconsin Alumni Research Foundation. It kills by producing hemorrhage. Rax is a slow-acting poison; but since it is tasteless and odorless, it is easy to feed to rats and mice. In most cases, it will successfully control a rat and mouse population and then help prevent its rebuilding.

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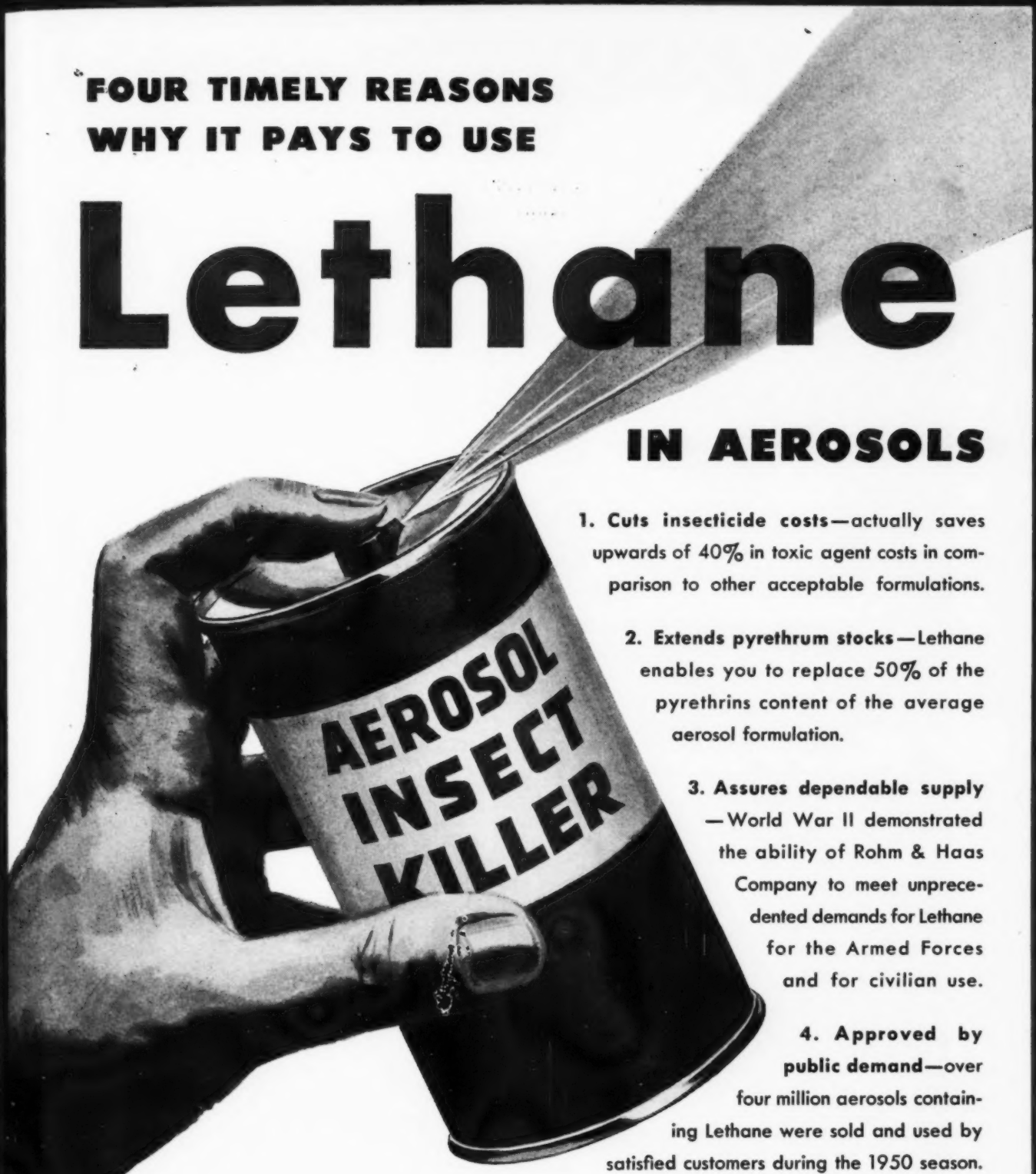
FOUR TIMELY REASONS WHY IT PAYS TO USE

Lethane

IN AEROSOLS



1. **Cuts insecticide costs**—actually saves upwards of 40% in toxic agent costs in comparison to other acceptable formulations.

2. **Extends pyrethrum stocks**—Lethane enables you to replace 50% of the pyrethrins content of the average aerosol formulation.

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4. **Approved by public demand**—over four million aerosols containing Lethane were sold and used by satisfied customers during the 1950 season.

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DREYER HAS WHAT YOU NEED! Expertly compounded by our specialists to combat harsh odors . . . Adding their own pleasant scent to the end product. For greater efficiency, MORE ECONOMY, contact the Dreyer chemist.

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SANITARY PRODUCTS
A SECTION OF SOAP

AS the Chemical Specialties Manufacturers Association gathers in New York for its 37th annual meeting, a glimpse of the program shows the extent to which this group has expanded its activities over the past few years. Its membership has grown and its interests have fanned out in all directions. But with this expansion, have come new problems, new headaches, new demands. Sometimes, we have a hunch, the leaders of CSMA wish again for the peace and quiet of yesteryear.

AS THE aerosol principle of application of insecticides, deodorants, germicides, paints, lacquers, cosmetics and other products continues to expand its base of operations, we feel that a note of caution again might be injected into the marketing situation. In their enthusiasm for something new and successful, marketers are too often inclined to rush into added phases of an idea with too little thought or consideration of all the technical factors involved. In their haste to beat competition to the punch, to get the new thing to market and cash in on it, manufacturers have in the past been known to make serious mistakes. This could happen in the current scramble to market new things in aerosol packages. In fact, we are not so certain that some mistakes have not already been made which eventually may hurt the market for other aerosol products.

In their search for new markets, some aerosol people seem to be going pretty far afield, it would seem to us, and in so doing are spending time and money on development work for new products where sustained demand at a price could be subject to serious doubt, or where superiority of the aerosol principle is questionable. That the more level heads of the industry are conscious of these facts and are trying to avoid the pitfalls is quite generally admitted. However, if some of the newcomers fail to heed the advice of their experienced fellows, the future value of the aerosol principle as an effective marketing device could be seriously lowered. Growing pains can be lessened by making haste slowly!

UNLESS a very material change occurs in the basic chemical situation over the next sixty days, which is altogether unlikely, general scarcities of most important insecticide materials will continue through the first half of 1951. Manufacturers of insecticides not now covered on raw materials are bound to find their positions difficult next year. The trouble goes to the very roots of chemical production, scarcities of benzol, chlorine, and alkalies. From these stem the scarcities of chemicals which in turn restrict the production of finished insecticides, germicides, herbicides, and auxiliary items.

Even under normal output, our supply of chlorine is estimated to be some ten per cent short. Large users of benzol have been supplementing their supplies by imports from Europe for some time past. The after-effects of the Solvay strike on both chlorine and alkali supplies probably will continue to be felt for months to come. Opportunity for manufacturers to catch up on depleted stocks has been nil. All told, it is a tough situation on all buyers of chemicals. But it is even tougher on suppliers. So, don't call your supplier a cockeyed so-and-so if he ships you only half what you want. He would probably like very much to sell you and everybody else twice as much,—if he had it!

OUTLOOK FOR HOUSE FLY

THE house fly problem is again before us. With the determination of the striking and persistent fly-killing action of DDT by the Bureau of Entomology and Plant Quarantine in 1943, and the popular acceptance of DDT as a residual spray, everyone thought the house fly was knocked out for good. This pest, like many others, has a way of coming back. This time it is coming back through its ability to develop resistance to insecticides.

Just how serious is the house fly problem is the question asked repeatedly today. Well it's bad enough. Not that house flies have attained the abundance and economic importance of pre-DDT years, but there is a trend toward that old status. I've been about the country a good deal recently and the fly conditions observed in most instances did not approach the old days when it was a struggle sometimes to beat the flies to a bite of food, and white paint on dairy barn beams promptly became edged with black.

Everyone now appears to have accepted the development of insect resistance to insecticides as a fact. But it seems doubtful if everyone recognizes, or at least admits, the seriousness of the situation. I say the situation is serious because most everyone is still putting full dependence on insecticides to control this prolific and dangerous pest, and under some conditions at least, the flies have become so resistant that, jokingly, it takes a hammer to kill them.

Investigations carried on by several workers during the last two years show clearly that our first idea, as expressed at the Toronto meeting of this association, (1948) is not working as well as we had hoped. The idea expressed then was that resistance in house flies was rather specific for given insecticides or related insecticides. This is true to some extent, especially when only a relatively low degree of resistance exists, but it appears now that when a marked resistance has developed, especially to two different insecticides, that the strain may readily become resistant to all of the commonly used materials. It also appears that when a high resistance has been developed, it may persist for a long time, contrary to the early indications.

Not only do flies protect themselves now from the destructive action of an insecticide by becoming resistant to it, but they also have been observed by many workers to change their habits. They now tend to avoid the sprayed surfaces and rest on the floor or out of doors on the grass, weeds and ground, instead of resting on the ceiling and walls of a barn. Although the flies may leave a sprayed surface because of the irritating effect of the insecticide, it is possible that changed resting habits may be acquired in time without the individual flies contacting the chemical.

Bruce and Decker (1950, page 146) have reported that flies having a low resistance (10 to 40 times normal), have been observed to show a faster knock-down rate than susceptible strains when exposed briefly to DDT treated surfaces. They also have noted that DDT resistant flies collected in nature may recover to the extent of 85% after being knocked down, while non-resistant strains were all killed by a similar exposure.

The seriousness of this situation is emphasized by the fact that highly resistant strains are appearing in nature in various parts of the United States—and in other countries too. Resistance appears to have developed first and most intensively in the warmer parts of the country, as would naturally be expected. This condition is probably due to the greater number of generations per year in southern areas, and to the more intensive use of DDT residual sprays there. Strains of flies having marked resistance are also appearing in nature in more northern latitudes. This is attested to by numerous reports and authenticated experiments such as those of Bruce and Decker (1950) in Illinois, Keiding and van Deurs (1949) in Denmark and by Wiesmann (1947) in Sweden. Bruce and Decker demonstrated that of the flies collected on 94 Illinois farms, only 12.8% showed the same susceptibility and 26.6% were 31 to 60 times

*Before Natl. Pest Control Assn., 18th annual meeting, Cincinnati, Ohio, October 24, 1950.

CONTROL

By Fred C. Bishopp*

Assistant Chief
Bureau of Entomology
and Plant Quarantine
U. S. Department of Agriculture

as resistant to DDT, as a normal laboratory strain.

Results of laboratory tests of several insecticides on DDT-resistant flies by Keiding and van Deurs (1949) and by Barber and Schmitt (1948) led these authors to the conclusion that whereas DDT-resistant flies showed resistance to insecticides chemically related to DDT, they were susceptible to unrelated toxic compounds. The work of a number of other investigators, however, has shown that resistance is not highly specific to individual chemicals or groups. Wilson and Gahan (1948) compared the susceptibility of a normal laboratory strain and a laboratory developed resistant strain to five insecticides, technical chlordane, toxaphene, rotenone, pyrethrum extract plus piperonyl cyclonene and Thanite. The DDT-resistant strain was found to be distinctly resistant to the other toxicants applied both as a space spray and used as a residual deposit. The excellent studies by Bruce and Decker (1950) showed resistance follows to some extent the insecticide group pattern.

Certainly flies exposed in nature to two or more insecticides as residues, develop a remarkable resistance to most of the insecticides commonly used in fly control. This is well illustrated by Knipling (1950) reporting on a fly population at a dairy near Orlando, Fla. in which DDT, methoxychlor, pyrethrum-piperonyl butoxide, and dieldrin failed to give appreciable control. The Pollard (Santa Ana, Calif.) strain of house flies as reported by Marsh and Metcalf (1950) has marked resistance to DDT, and related compounds, and to lindane and dieldrin. These authors have reported similar types of resistant strains in other widely separated localities. Bruce and Decker (1950) have found that the use of an insecticide against fly larvae will result in the development of adults resistant to that insecticide. Also that the use of the same insecticide against larvae and adults will hasten the appearance of highly resistant strains.

Mosna (1950) has reported excellent control of DDT-resistant flies in the Province of Latima during 1949 by the use of chlordane as a residual spray.

Practical barn spraying tests by Gilbert, Wilson, and Coarsey (1950) in Florida during 1948 and 1949 where DDT-resistant flies were common, showed chlordane emulsion (100 mg. per sq. ft.) to be the most consistently effective material, with 84 to 98% control for 5 to 7 weeks or longer. Lindane applied at the rate of 50 mg./sq. ft. gave excellent control in 3 of 4 tests. In one of these such control lasted 6 weeks. Dieldrin applied at the same rate as an emulsion gave excellent control in 4 barns for 6 weeks or longer. Toxaphene emulsion at 200 mg./sq. ft. gave excellent control for 8 weeks in a previously untreated barn but did not give any satisfaction when used as a water dispersible powder spray.

The tremendous degree of resistance to insecticides that has already developed under natural conditions certainly gives cause for anxiety. This problem has caused renewed efforts on the part of Government, State and industry workers to find some chemical or combination of chemicals, some formulation or some method of application that will give the desired quick knockdown and sure death of flies and will remain effective for a reasonable length of time when applied as a residual spray. Safety of use in buildings, of course, is another important and distinctly limiting factor.

How Does Resistance Develop?

PEST control operators may perhaps not be as much interested in how insecticides kill, as they are interested in why they do not kill under certain circumstances. Considerable research is under way to try to determine why DDT and other insecticides that were formerly so effective fail to kill flies now. Several theories have been advanced. None of them seems to cover all of the phenomena that have been observed.

Research by Bruce and Decker (1950) by Sternburg, Kearns and Bruce (1950), and by Marsh and Metcalf (1950), shows clearly that DDT gains access to the bodies of the resistant flies apparently at the same

rate as to those of the susceptible ones. The resistant insects, however, have the power to detoxify the DDT rather rapidly. That is, they change the toxic chemical to a non-toxic compound. This detoxification mechanism may not be the explanation of resistance to all insecticides, however.

There is a difference of opinion as to the mechanism by which the resistance factor is passed from generation to generation. It is definitely transmitted, at any rate, and crossing resistant strains with non-resistant ones cuts the average resistance about in half. A wide range of resistance is thus exhibited by the progeny of such crosses.

Alternative Control Measures

THE development of insect resistance to insecticides has stimulated interest in space sprays and methods of applying them. Pyrethrum plus piperonyl butoxide or other synergists and the new synthetic material, allethrin, used in sufficient strengths and quantities to kill all flies in buildings are strong favorites. The synthetic organic thiocyanates Thanite and Lethane, applied in odorless kerosene also have a place in clearing flies out of buildings.

Volatilizing lindane in fly infested rooms or barns has been found effective in killing flies. Several devices are available for this purpose. Recently Mr. W. H. Sullivan of the Bureau of Entomology and Plant Quarantine has found that a highly effective way of killing certain insects is to pass the air stream through an air filter previously treated with lindane. The procedure is to apply lindane (15-100 grams) through an air conditioning filter so that the glass fibers are uniformly covered with the crystals. The fiber glass screen can be purchased for about $1.00 at any hardware store. Its use increases the evaporation surface area enormously. In use it is simply placed in front of any 10- or 16-inch household fan.

Since the early work of Dr. L. O. Howard, former Chief of the then Bureau of Entomology, the importance of eliminating breeding places of the house fly has been urged. The spectacular results obtained through the use of DDT as a residual spray led our people to place total dependence on insecticide control and forget many of the principles of sanitation.

It is realized that pest control operators may feel that elimination of fly-breeding places and general sanitation are community problems and therefore beyond their normal sphere of special interest. I maintain, however, that PCOs should be concerned with control procedures beyond the application of residual and space sprays in buildings. Now that strains of flies extremely resistant to insecticides are present in many parts of the country they cannot expect to give their clients satisfaction with the increasing fly population pressure from the outside and the short duration of the effectiveness of the sprays used. It therefore behooves them to cooperate with communities in the improvement of sanitary conditions and to give more thought to the utilization of fly control measures on an area basis. There would seem to be no reason why PCOs should not take part in large-scale fly control operations, including their organization and the many integral parts of their execution.

Fly Control Program for '51

NOW to sum up the fly situation in 1950 and to suggest lines of attack on the problem in 1951. The campaign against flies in 1950 did not go as well as we would have liked, mainly because of the development of insecticide-resistant strains. We were favored, however, by having a season that was not too conducive to fly breeding.

I ventured at the outset to say that I'm sure you will be disappointed at the lack of clear-cut recommendations regarding the use of insecticides in 1951. I wish we had something that we could say without hesitation—THAT is the insecticide. It is a quick killer, effective against all flies in every situation, persistent, not dangerous, will not stain, has a pleasant odor or none at all, is easy to apply and is reasonable in cost! I wish we had such an insecticide, but it's expecting a great deal.

In the 1951 campaign each of us is going to have to use his head. No one simple and uniform procedure can be laid down for the whole country. We must be ready to adopt a procedure that fits best in a given locality and a given situation and to be as able to change our fighting tactics as the flies are to acquire resistance or modify their habits.

Because of keeping our attack procedure flexible, it seems a bit hazardous to set down all recommendations in concise form without many qualifications. We shall do our best, however, to be concise, recognizing the control measures suggested may have to be adopted to fit local conditions and situations.

The following recommendations and suggestions are made for fighting flies in 1951:

1. Emphasize sanitation in every instance; especially adequate and prompt disposal of manure, garbage and other fly-breeding materials.
2. Install effective door and window screens and keep them in good repair.
3. Devise means of keeping flies away from entry ways by the installation of overhead fans and/or vestibules.
4. In some instances the utilization of electrified screens on doors or windows is useful in excluding or destroying flies.
5. Eliminating attractive materials and odors in buildings, especially food-handling establishments, is a material aid in reducing fly entrance into buildings.
6. Spray exteriors rather than interiors. Strive to kill the flies before they gain entrance to buildings. Give special attention to spraying entry ways and porches.
7. For outdoor spraying, DDT, methoxychlor, lindane, benzene hexachloride, toxaphene, or chlordane are usually employed. Dieldrin is also very effective, but is not cleared for use by the public. Water dispersible materials, emulsions or oil solutions may be used. Choice of the toxicant depends much on whether insecticide-resistant flies are abundant. DDT may still be used in areas where resistance has not developed. Where vegetation may be struck with the spray, use water dispersible materials.

   When DDT-resistant flies are encountered, probably the next choice is lindane. Chlordane has shown good results in many instances.
8. Do a thorough job of spraying, paying special attention to places where flies normally rest.
9. In dairy barns use lindane or methoxychlor as residual sprays. Apply these at the rate of 25 mg. and 200 mg. per square foot re-

(*Turn to Page* 149)

Buckingham fountains in Grant Park with Chicago skyline as a background.

SANITATION engineers in Chicago are in general thoroughly familiar with, and also highly appreciative of the assistance to be obtained through use of sanitation specialties. This was made emphatically evident recently in a series of interviews by a representative of *Soap and Sanitary Chemicals* with men responsible for sanitary maintenance in four typical fields of service, an office building, a theatre chain, in the city's railroad terminals and Chicago's vast public park system. This exploration, incidentally, uncovered some impressive evidence as to the sanitary supply salesman's position in promoting use of sanitation materials.

Intensifying Chicago's sanitation problem is the extremely high pollution of the air by soot and dust. During 1949 nearly 700 tons of air borne dust particles fell on each of the 212 square miles of land comprising Chicago's corporate area. Volume varied by season and place, ranging in March, 1949, for example, from 352.20 tons per square mile near the LaSalle Street railroad station, to 19.88 tons in the Rogers Park residential area, in the north section, near Lake Michigan. Worked out by Armour Research Foundation scientists at Illinois Institute of Technology, who keep continuous track of these figures for the city's department of smoke inspection and abatement, the average 1949 fall was 57.75 tons per square mile per month.

An Association of Commerce estimate places the city's annual cost of cleanliness at $10 per person, or a total of approximately $35,000,000. This figure, however, includes personal cleanliness factors, which are excluded from consideration here.

Newest and most up-to-date office structure in Chicago is the 43-story Field Building at 135 S. LaSalle Street, where D. V. Nelson, building superintendent, says the problem of keeping the place clean is largely one of determining what not to do or use. Approached from this standpoint, he sees his job as calling for continuous appraisal of everything going into the janitor work.

"It might be better," said Mr. Nelson, "to ignore the dirt almost completely, rather than to employ improper materials that might injure the surfaces to be cleaned. Once that surface is damaged, your cleaning problem begins to get ahead of you and your costs will climb."

Before a stone was laid or a nail driven, Mr. Nelson said, thought was given to selection of construction materials that could be cleaned adequately, easily and economically. Before the final design for toilets was accepted, for instance, model toilets

were built of varied materials, to determine which could be kept clean most easily. Final agreement was reached on a room with walls of ceramic tile, floors of flint tile, seats of hard composition material and stall partitions of polished glass.

They're "de luxe" toilets, perhaps, but by planning ahead, sanitary maintenance has been immensely simplified. Having ideal conditions to start with, a rigorous routine has been followed, calling for daily scrubbing of floors, polishing of fixtures, washing down of walls and glass partitions and sterilization of seats, which insures continuance of the ideal status at low cost. One by-product gain has been elimination of expenditures for deodorants. "Clean surfaces don't need deodorants," said Mr. Nelson. "We eliminate all odors by keeping all surfaces in perfect sanitary condition at all times."

One big cleaning problem in the Field building involves the block-long street level corridor. Under any condition it is a terrific job to keep white terrazzo floors clean, Mr. Nelson remarked, and the problem of finding the best cleaning compound for the heavy traffic here was given long and earnest study. What is essential, he explained, is a scouring powder that will loosen dirt and lift it so it can be readily flushed off. If pumice in the compound is sharp and harsh, the frequent scrubbings would quickly wear the terrazzo down until it would begin to disintegrate. Various products were tried and eventually it was decided that a powder containing approximately a 60-mesh pumice, with the proper amount of soap powder added, would work as desired. This is now obtained on specification.

In selecting soaps and detergents for use on other floors similar experimenting was done to find the product that would work best under conditions present. About 40,000 pounds per year of one detergent are used in machine scrubbing on hard floors. Another 10,000 pounds of soap powder are consumed in hand mopping operations and, where floors are waxed, preliminary scrubbing is done with a special cleaner for this purpose, of which about 5,000 pounds are used annually. Consumption of liquid floor wax runs to over 1,000 gallons each twelve months.

Considerable research, Mr. Nelson said, has also been devoted to selection of proper materials and procedures for cleaning marble walls and for maintaining ornamental metals of aluminum, bronze or nickel-silver. Builders selected two types of marble for the street level corridor, one a white Colorado "Yule," the other a brown imported Italian stone, each of which requires different treatment to remove grime and maintain its original brilliance. The Italian marble is easy to clean, but care and skill are required to avoid injuring the white Colorado panels. After experimenting with various products a suitable bleach was developed and is supplied on specification.

To protect metal trimmings a coat of lacquer is applied at intervals whenever a new treatment seems necessary. Old lacquer is stripped off and the metal rebrushed with new, which greatly reduces cost of polishing as usually done. Window frames throughout the towering Field building are of aluminum and as these could be affected by alkalis or other corrosive chemicals, window washers use nothing but clean water.

One Field Building feature, not common in any but the most modern office structures, is the central vacuum cleaning system in which dust, picked up by powerful sweepers on the most remote floor, is channeled direct to basement bins. When sweepers are equipped with individual dust bags, said Mr. Nelson, there is bound to be some re-distribution of dust in the room after it is drawn from rugs. That this central exhaust system gets the dust completely out of a room is demonstrated, he declared, by the fact that, after sweeping an office, there is no film of dust behind furniture, where dust that escapes from bags always shows up.

Still another unique Field building sanitation feature is the "precipitron" device added to the air conditioning equipment that serves the first four floors and the lower arcade. When installed in 1936 it was the first of its kind in the middle west. As explained by L. R. McMillan, the building's assistant chief engineer, when air enters the system its dust content is removed in a water spray chamber. But before moving into the fans, this air passes through a magnetic field where any dust particles still present receive an electrical charge that drives them to a positive plate circuit where they adhere. To make adherence still better, this plate is covered with a film of oil. This system is the most efficient known for air purification, Mr. McMillan asserted, and results in removing 90 percent of the dust particles.

In the air conditioned area this double purification has reduced cleaning and redecorating costs tremendously, Mr. Nelson stated, as shown by comparison of figures here with those for comparable areas not air conditioned. "We know the air conditioned

Ross Clark spraying insecticide in lion's cage in Lincoln Park as animal keeper Bill Faedtke looks on

Chicago Park District crew removing dirty scrubbing solution from floor that has just been scrubbed with a Ponsell floor machine.

area is cleaner and easier to keep clean," he added, "but we still go over those areas every day, just as elsewhere in the building."

Field Building housecleaning is handled by a staff of 160 persons, 42 men and four matrons being on the staff, while night crews number fifteen men and 99 women. Regular inspections and checkups keep them on their toes and further efficiency is attained by organizing workers into groups of specialists who handle particular jobs. Marble wall cleaning, for example, requires a high degree of expert skill and, by making this task the responsibility of one crew, the men can be properly trained to insure maximum efficiency and reliability.

Cleaning supplies are purchased from a number of leading companies, Mr. Nelson said. When reserve stocks reach a certain point of depletion, these are automatically re-ordered by the stock room clerk.

In one instance, he related, one element in a certain detergent was found not up to standard. Conferences followed with the manufacturer, and new supplies were checked for sixty days. When no improvement was evident, use of this detergent was discontinued. On the whole, however, he has found manufacturers eager to cooperate and provide materials on specifications worked out by practical use.

The fundamental reason why so much attention has to be devoted to the cleaning supplies, Mr. Nelson asserted, is "Because there are so many phoney materials on the market." This, he said, calls for caution to avoid getting products that will injure surfaces of building materials. "It would be a lot easier for us," he said, "if sanitary supply salesmen knew their products better and understood the effect these have on surfaces. Few salesmen, however, know much on that score. A lot of sanitary supplies are sold simply by high pressure salesmanship. We buyers have to build resistance to their sales talks, else we would get into trouble."

AROUND Chicago's six railroad terminals men in charge of sanitary maintenance revealed one development worthy of more than passing notice by the sanitary supply industry. Diesel locomotives, it seems, have greatly eased the job of keeping stations clean, the extent of this transformation being implied in a statement by a Batelle Memorial Institute authority that dieselization on all railroads displaced 51,000,000 tons of coal in 1949.

Already a few roads entering Chicago are 100 percent dieselized as to their overland trains and one line, the Illinois Central, years ago completely electrified its suburban service. On most of the other two dozen lines terminating at Chicago, however, suburban traffic is still handled largely by the familiar old cinder snorters. When the last of these is relegated to the graveyard, a new day indeed will dawn for terminal sanitation supervisors.

Gone will be the soot, cinders, greasy grime and acrid fumes that, from the advent of the first steam locomotive, have been unavoidably present in every railroad waiting room. Railroad cleanup folks won't care one bit, they all agree. But—how about the effect on sales of soaps and cleaning compounds in this field? This may be something for manufacturers and distributors to watch closely.

There still is, however, a large market for sanitation products around all railroad stations. They still utilize plenty of scrubbing soaps for floors and passageways, which usually get a thorough going over once each twenty-four hours. There's a big demand for polishes for metal stair rails, door knobs, kick plates, brass work around train shed gates, grill work on elevator cages, directional signs and ornamental light pedestals.

Washroom sanitation in railroad stations gets thorough attention, which requires germicides, disinfectants, deodorants and porcelain polishes in considerable volume. Insecticides of the contact variety are used in waiting rooms, and at Chicago's Union Station the infants' lounge, and also the women's rest room, are sprayed with residual DDT sprays once a month, to ward off bed bugs. Rodent problems exist at all terminals, with mice the worst offenders, particularly in mail and baggage rooms. At the Union Station, it

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was learned, this job is looked after by a professional pest control service, which polices and treats certain areas in succession at stated intervals.

Window washing is a continuous task at all terminals, while those having office quarters on upper floors of the "headhouse" get the usual nightly housekeeping attention given any office building. For the sweeping, mopping, dusting, disinfecting and polishing here varied chemical sanitation products are required.

Station dining rooms and lunch counters are a market for dishwashing compounds, silver polishes, cleaners for kitchen equipment, floor scrubbing soaps. Eating places, also drug stores, florist shops, souvenir counters and newsstands in the terminals are usually operated by concessionaires, who look after their individual housekeeping and deal with suppliers direct.

Characteristic of railroad buying operations generally, purchases of sanitation products for station use are made on specification and it is significant that, once a maintenance supervisor settles on one product, he seldom changes. At one terminal the supervisor of janitor service said he has tried "a lot of detergents" for washing down walls but only one brand has ever wholly satisfied him and for fourteen years he has been using that one product exclusively. He finds it the perfect detergent for removing the shoulder-high smudge marks travellers leave on terra cotta concourse walls and the finger marks around train shed gates.

Pine oil disinfectants are bought at one terminal in 55-gallon drums and purchase of most supplies is on a month-to-month basis. At the Union Station about 700 gallons of soap solution are used monthly in floor scrubbing machines, but this is home-made on the premises under direction of the maintenance supervisor.

"SHOW business" in Chicago, the survey revealed, requires consumption of considerable quantities of sanitation chemicals. Chicago has 298 licensed motion picture houses, ten theatres for dramatic and operatic productions and three classed as concert halls. To keep the movie "palaces" spotless their sanitation engineers have long realized that the job can best be done with modern sanitation chemicals. Soaps and detergents, scouring powders, polishes, insecticides, disinfectants, deodorants, all figure in their operations. Since, also, popcorn and peanuts spilled under seats bring in the mice, purchases include plenty of rodent baits and poisons. Outside, the huge electric signs must be washed constantly, but this work, like the pest control job, is usually done by professional services.

ARTHUR E. EDWARDS

So far as could be determined, no Chicago theatre yet uses glycol vapors for controlling infectious respiratory organisms in auditoriums. Managers are reported deeply interested, but until they can appraise more definitely the effect of television on potential future attendance figures, they are said to be deferring action on adoption of this new development.

One theatre corporation, the EssanEss organization, which runs thirty movie houses in Chicago and suburbs, reported that it spends about $3,000 annually for soaps, detergents, urinal blocks and miscellaneous cleaning chemicals for use in all its properties, also about $450 a year for mops and brushes and $800 annually for dusting and polishing rags.

Some individual janitors among this chain insist on particular brands of soaps and detergents, but others take what the purchasing agent in the downtown central buying office selects, based on quality and price. If a janitor finds fault, something else is sought that will perform efficiently at moderate cost. A checkup on performance of cleaning products and the janitor's use of them is made by the general maintenance superintendent in his rounds of the chain's locations.

Outdoor "drive-in" movie theatres are not permitted within Chicago's limits, but many operate in adjacent suburban areas and others are being planned. Since flies and mosquitoes could be annoying here on hot summer evenings, salesmen should not overlook possibilities for marketing large volumes of insecticides of the residual type for spraying the premises.

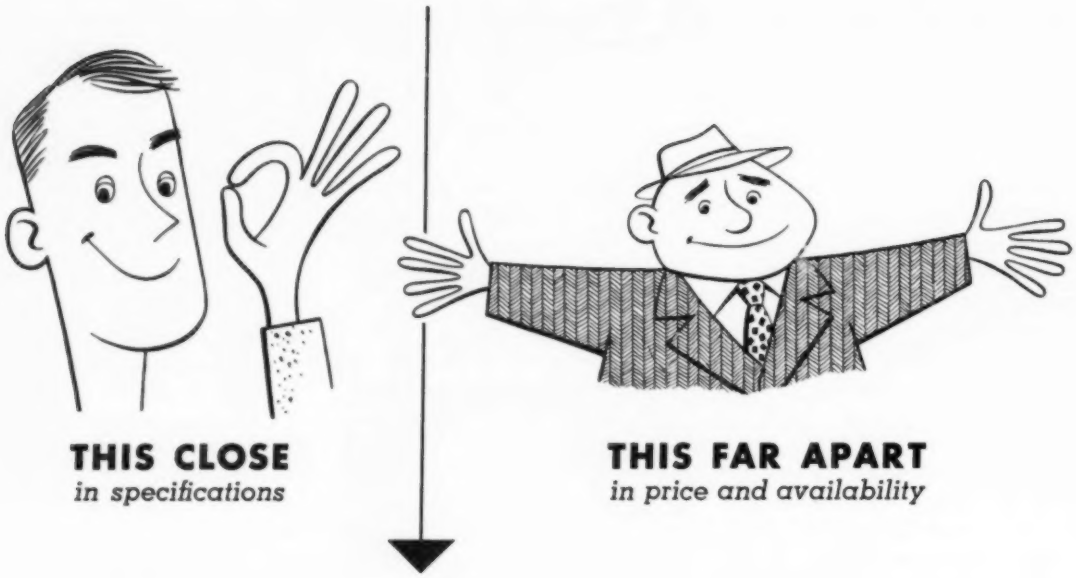
IN the Chicago Park District's far flung system of 160 public recreation areas sanitary maintenance has been placed on a thoroughly scientific basis and to get in here the sanitary supply salesman definitely has to prove the merit of his products.

In size, Chicago's parks range from an acre or two up to some with a thousand or more acres. Scattered through 112 of the parks are buildings containing assembly halls, club quarters, infant welfare stations, class rooms for craft work, gymnasiums, shower rooms, locker rooms, comfort stations, seven indoor and fifty-one outdoor swimming pools, also thirteen lake front bathing beaches, while the Lincoln Park zoo has a dozen or more structures for the animals.

At Gage Park the largest recreation building contains 48,228 square feet of floor area and Garfield Park's "Gold Dome" building, of state capitol proportions, has 30,000 sq. feet. Sanitary maintenance in this varied layout obviously presents an assortment of problems. Many of the problems faced are highly specialized, such as sanitation at the zoo or in Soldier Field stadium, and such matters as protecting the marble basin of magnificent Buckingham Fountain or preserving world-famous pieces of statuary scattered through the parks.

No matter the nature of the cleaning problem, all are handled in stride by a regular year-round staff of 316 men, 94 women and thirty head attendants, augmented in summer by

(*Turn to Page* 141)



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C. S. M. A. Meeting in New York

CONSIDERATION of the problems to be faced in the coming year highlighted the opening session of the 37th annual meeting of the Chemical Specialties Manufacturers Association, being held at the Hotel New Yorker, New York, Dec. 4-5. The effect of the intensified rearmament program in the coming months on the general economy and the chemical specialties industry in particular was covered by the chief economist of Prentice-Hall, Inc., New York, and the chemical editor of the New York *Journal of Commerce*, respectively.

In his president's address, Leonard J. Oppenheimer, of West Disinfecting Co., Long Island City, N. Y., pointed out that "all business has a part in preparedness," which he said will continue even though the war in Korea may have an early end.

He predicted more acute scarcities in the future than ever before, adding that we are better equipped now to handle them. Mr. Oppenheimer expressed disappointment at failure of a greater number of members to participate in the formation and activities of a Traffic Committee, and particularly its inability to secure a well qualified chairman, when the group met recently. This has postponed the formation of such a group until a chairman can be named, he said.

In his secretary's report, H. W. Hamilton of H. W. Hamilton Co., New York, pointed out that chemical specialties manufacturers are facing many problems in the procurement of basic materials. However, he stated, regardless of the severity of regulations, sanitation chemical firms should not suffer too badly since "no program of economic regulation (military or civilian) can overlook the need to promote personal and environmental cleanliness, control of insects and other pests, preservation of valued fabrics and the prevention of the spread of communicable diseases. There will be materials required for these purposes and we shall supply them to the civilians and to the Armed Forces," Mr. Hamilton declared.

Following the general session on the morning of Dec. 4, at which a nominating committee was elected, the five divisions within the association were to meet. The divisional meetings, some of which were joint gatherings of those divisions having related interests, were to continue over to the morning of Dec. 5. Where necessary, uncompleted divisional programs were arranged for the afternoon of Dec. 5., a group luncheon and general session intervening.

A group luncheon is being held on the first day of the meeting.

The banquet and entertainment were scheduled for the night of Dec. 5.

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Treasurer

MELVIN FULD
Program Chairman

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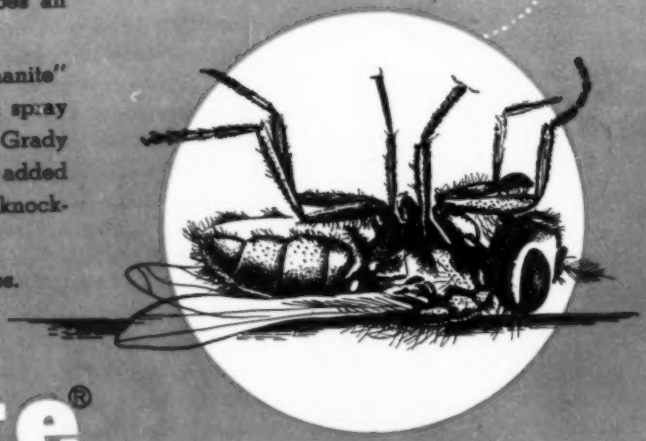

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The program committee, of which Melvin Fuld of Fuld Brothers Co., Baltimore, acts as general chairman is composed of the following: General vice-chairman, John A. Rodda, U. S. Industrial Chemicals, Inc., New York; Divisional program chairmen: (Insecticides) James A. Green, Standard Oil Co. of Indiana, Chicago; (Waxes and Floor Finishes) Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.; (Aerosols) H. R. Shepherd, Connecticut Chemical Research Corp., Bridgeport; co-chairmen: (Soap, Detergent and Sanitary Chemical Products Division) A. G. Peck, Peck's Products Co., St. Louis, and P. G. Bartlett, West Disinfecting Co., Long Island City; (Disinfectants and Sanitizers) H. D. Lederer, R. M. Hollingshead Corp., Camden, N. J.

Program for the 37th Annual Meeting Chemical Specialties Manufacturers' Assn. Hotel New Yorker, N.Y., Dec. 4-5

Monday Morning, December 4

8:30 A.M. Registration—Ballroom Foyer.
9:30 A.M. Meeting Called to Order—North Ballroom.

General Session, North Ballroom

L. J. Oppenheimer, presiding

Paper No.

G-1—Address of President—L. J. Oppenheimer, West Disinfecting Co., Long Island City, N. Y.
G-2—Report of Secretary—H. W. Hamilton, H. W. Hamilton Co., New York.
G-3—Report of Treasurer—P. C. Reilly Jr., Reilly Tar & Chemical Corp., Tuckahoe, N. Y.
Appointment of Committees.
Election of Nominating Committee.
G-4—"Industrial and Institutional Sanitation as a Way of Life"—Walter Snyder, National Sanitation Foundation, Ann Arbor, Mich.
G-5—"The Chemical Outlook for 1951"—Dwight Moody, *Journal of Commerce*, New York.
G-6—"The General Economic Outlook for 1951"—Leo Barnes, Prentice-Hall, Inc. New York.
12:30 P.M. Group Luncheon—Grand Ballroom.

Monday Afternoon, December 4

Aerosol Division, Panel Room

H. E. Peterson, presiding

Election of Officers.

Paper No.

A-1—"Survey of Retail Distribution Practices and Consumer Buying Habits in the Aerosol Industry"—F. L. Shackelford, C. E. Kimble and Edmond G. Young, Kinetic Chemicals Division, E. I. duPont de Nemours & Co., Wilmington, Del. Delivered by E. G. Young.
A-2—"Showmanship—How Can it be Used in the Aerosol Industry?"—Zenn Kaufman, Philip Morris & Co., New York.
A-3—"Publicity—How Can it be Used in the Aerosol Industry?"—Maurice Mermey, Baldwin & Mermey, New York.
A-4—"1950 Report on Drug Store Trends and What it Means to the Aerosol Industry"—Ray H. Haun, *This Week* magazine, New York.
A-5—"Cosmetics and Drugs—Their Future in the Aerosol Industry"—Frazer V. Sinclair, *Drug Markets, Inc.*, New York.

Joint Session: Disinfectant & Sanitizers and Soap, Detergents & Sanitary Chemicals Divisions, North Ballroom

E. G. Klarmann and H. W. Zussman, presiding

Election of Officers: Disinfectant & Sanitizers Division, Grand Ball Room.

Election of Officers: Soap, Detergents & Sanitary Chemicals Division, North Ball Room.

Paper No.

Df & Sp-1—"Sanitation in a Confectionery Manufacturing Plant"—Fred B. Jacobson, Stephen F. Whitman & Son, Inc., New York.
Df & Sp-2—Fluorochromatic Method for Cutting Organic Matter on Restaurant Dishware"—Emil Domingo, Department of Health, New York.
Df & Sp-3—"Quaternary-Type Detergent Sanitizers on the Dairy Farm"—Russell G. Puhle, Tykor Division, Borden Co., New York.
Df & Sp-4—"The Influence of a Hard Water Upon *In Vivo* Challenge of Disinfectant"—E. W. Dennis, Sterling Winthrop Research Institute, Rensselaer, N. Y.
Df & Sp-5—"The Capacity of Chlorine Type Germicides for Disinfecting Previously Cleaned Surfaces"—by L. S. Stuart, John Bogusky, L. F. Ortenzio, J. L. Friedl, Bacterial Section, Insecticide Division, U.S.D.A., Washington, D. C. Delivered by L. S. Stuart.

Insecticide Division, East Room

T. Carter Parkinson, presiding

Election of Officers.

Paper No.

I-1—"Dairy Cattle Fly Sprays—Past and Present"— M. H. Doner, J. R. Watkins Co., Winona, Minn.
I-2—"Modern Sprayers for Modern Insecticides"—Earl D. Anderson, Secretary, National Sprayer & Duster Association, Chicago, Ill.
I-3—Report of Insecticide Scientific Committee — E. J. Campau, Standard Oil Co., Whiting, Indiana.
I-4—"Significance to the Insecticide Industry of Fly Resistance"—W. M. Upholt, U. S. Public Health Service, Communicable Diseases Center, Technical Development Services, Savannah, Ga.
I-5—"Spray Residue Hearings and the Congressional Investigation"—John D. Conner, General Counsel, C.S.M.A., Washington, D. C.
I-6—A Symposium: "New Developments in Insecticides and Equipment." Moderator: F. C. Nelson, Esso Standard Oil Co., Elizabeth, N. J.
"The New Botanical Insecticide 'Scabrin'" — R. C. Roark, In Charge, Insecticide Investigations, Agricultural Research Administration, Bureau of Entomology & Plant Quarantine, U. S. Department of Agriculture, Beltsville, Md.
"The Status of 'Dieldrin' for Fly Control in 1951"—C. C. Compton, Julius Hyman & Co., Denver.
"Recent Developments on Chlordane and Heptachlor" —J. E. Bussart, Velsicol Corp., Chicago, Ill.
(1) "Comments on New Materials Used as Insecticide Repellents" and (2) "Recent Information on Chigger

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Manufacturers Association
Hotel New Yorker
December 3 to 5

Control"—C. N. Smith, Division of Insects Affecting Man and Animals, U. S. D. A., Orlando, Florida.
"Simplified Method of Determining Pyrethrins"—A. J. Shukas, U. S. Industrial Chemicals Inc., New York.
"New Developments in Sprayers"—W. N. Dickison, H. D. Hudson Manufacturing Co., Chicago, Ill.
"Recent Advances on the Allethrin-Synergist Combination"—Donald F. Starr, S. B. Penick & Co., New York.

Waxes and Floor Finishes Division, Parlor F

Bayard S. Johnson, presiding

Election of Officers.

Paper No.

W-1—A Symposium: "Problems in Purchasing Water Emulsion Waxes"——Moderator: Clarence L. Weirich, C. B. Dolge Co., Westport, Conn.
Speakers: A. M. Moore, Department of Purchase, City of New York. D. H. Palmer, Hospital Bureau of Standards and Supplies, New York. W. H. Joy, American Telephone & Telegraph Co., New York. Warren A. Hough, Travelers Insurance Co., Hartford, Conn. Roy Varner, Penn Mutual Life Insurance Co., Philadelphia. Patrick Curtin, Maintenance Section, United Nations, Lake Success, N. Y.

W-2—"Infra-Red Spectrography Examination of Commercial Waxes and Polishes"—Philip Sadtler, Samuel P. Sadtler & Son, Inc., Philadelphia, Pa.

W-3—"High Melting Point Petroleum Waxes"—R. F. Scivally, Petrolite Corp., Kilgore, Tex. Delivered by: J. S. Lyall, Petrolite Corp., New York.

W-4—"Amine Emulsifiers for Wax Emulsions"—John L. Eaton, Sharples Chemicals, Inc., Wyandotte, Mich.

Tuesday Morning, December 5

Joint Session: Aerosol and Insecticide Divisions, North Ballroom

H. E. Peterson and T. Carter Parkinson, presiding

Paper No.

A & I-1—"A Review of Operations under the Federal Insecticide, Fungicide, and Rodenticide Act Since its Enactment"—W. G. Reed, Chief, Insecticide Division, U. S. D. A., Production and Marketing Administration, Washington, D. C.

A & I-2—"Toxicity of Chlordane Aerosols"—Francis F. Heyroth and Sylvan Witherup, The Kettering Laboratories, Dept. of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati, Cincinnati, O. Delivered by F. F. Heyroth.

A & I-3—"The Place of Allethrin in the Aerosol Problem"—J. B. Moore, McLaughlin, Gormley, King Co., Minneapolis.

A & I-4—"Industry Toxicity Problems from the Practical Point of View"—R. B. Stoddard, U. S. Industrial Chemicals, Inc., New York.

A & I-5—"Further Studies on Aerosol Formulations Containing Lethane and Other Toxicants"—F. B. Maughan, F. M. Mizell and J. P. Nichols, Rohm & Haas Co., Philadelphia. Delivered by: J. P. Nichols.

Disinfectant and Sanitizers Division, Parlor F

W. X. Clark, presiding

Paper No.

A Symposium: "Discussion of Quaternaries and Hypochlorites"—Moderator: C. K. Johns, Senior Bacteriologist, Department of Agriculture, Ottawa, Canada.

D-1—"The Hypochlorite Interests"—William A. Hadfield, Pennsylvania Salt Mfg. Co., Philadelphia.

D-2—"The Quaternary Interests"—J. W. Klimek, Sterling Winthrop Research Institute, Rensselaer, N. Y.

D-3—"The Hypochlorite Interests"—Vladimir Dvorkovitz, Diversey Corp., Chicago.

D-4—"The Quaternary Interests"—George R. Goetchius, Rohm & Haas Co., Philadelphia.

D-5—Remarks by the Moderator.
Floor Discussion.

Soap, Detergent and Sanitary Chemical Products Division, East Room

H. W. Zussman, presiding

Paper No.

S-1—"High Viscosity Detergent Solution"—H. L. Sanders, Ninol Laboratories, Chicago.

S-2—"Surface Active Agents and Related Chemicals in Metal Processing"—H. A. Strow, MacDermid Inc., Waterbury, Conn.

S-3—"Recent Developments in High Power Ultrasonics"—J. W. Butterworth, Brush Development Co., Cleveland.
Question Period.

Waxes and Floor Finishes Division, Panel Room

M. J. Flanagan, presiding

Paper No.

W-5—"Asphalt Tile Maintenance Problems"—Don Hiller, Johns-Manville Co., New York.

W-6—"Linoleum Maintenance Problems"—D. H. Spitzli, Congoleum-Nairn Inc., Kearny, N. J.

W-7—"Effect of Water Waxes on Wood Floors"—Frank H. Lyons, E. L. Bruce Co., Memphis, Tenn.

W-8—"The Mechanics of Walking"—P. A. Sigler, Technologist, National Bureau of Standards, Washington, D. C.

W-9—"Cost of Testing Water Emulsion Floor Wax in Accordance with Prescribed Specifications"—A. L. Sodergreen and Albert Katz, West Disinfecting Co., Long Island City, N. Y. Delivered by Albert Katz.

Tuesday Afternoon, December 5

12:30 P.M. Group Luncheon—Grand Ballroom.

G-7—Speaker: George B. Finch, The Jam Handy Organization, Inc., Detroit. "Making Your Salesmen More Effective."

General Session

Clarence L. Weirich, presiding

Announcements, Report of Nominating Committee; Election of Officers; Report of Resolutions Committee; Unfinished Business; New Business.

Aerosol Division, Parlor F, 3:00 P. M.

H. R. Shepherd, presiding

Paper No.

A-6—"Aerosol Raw Materials"—Melvin Goldberg, McLaughlin, Gormley, King Co., Minneapolis.

A-7—"Aerosol Lacquers—Their Place in the Protective Coating Industry"—G. F. Dittmar, Hercules Powder Co., Wilmington, Del.

A-8—"Corrosion in Aqueous and Alcoholic Aerosol Systems"—H. M. Parmlee and R. C. Downing, Jackson Laboratories, E. I. duPont de Nemours & Co., Wilmington, Del.

A-9—"A Discussion of Aerosol Valves"—Wainwright Tuttle, Bridgeport Brass Co., Bridgeport, Conn.

A-10—"Perfuming Freon Propelled Cosmetics"—R. Pantaleoni, Fine Chemicals Division, E. I. duPont de Nemours & Co., Wilmington, Del.
Committee Reports.
Unfinished Business.
New Business.

Soap, Detergent and Sanitary Chemical Products Division, East Room, 3:00 P. M.

B. Freudenthal, presiding

Paper No.

S-5—"Industrial Cooperation in Solving the Navy's Cleaning Problems"—Harry Fleisher, Bureau of Ships, Department of Navy, Washington, D. C.

S-6—"Chemical Needs of the Quartermaster"—R. Paul Schreiber, Military Planning Division, Office of the Quartermaster General, Washington, D. C.
Committee Reports.
Unfinished Business.
New Business.

Waxes and Floor Finishes Division, North Ballroom, 3:00 P. M.

Bayard S. Johnson, presiding

Paper No.

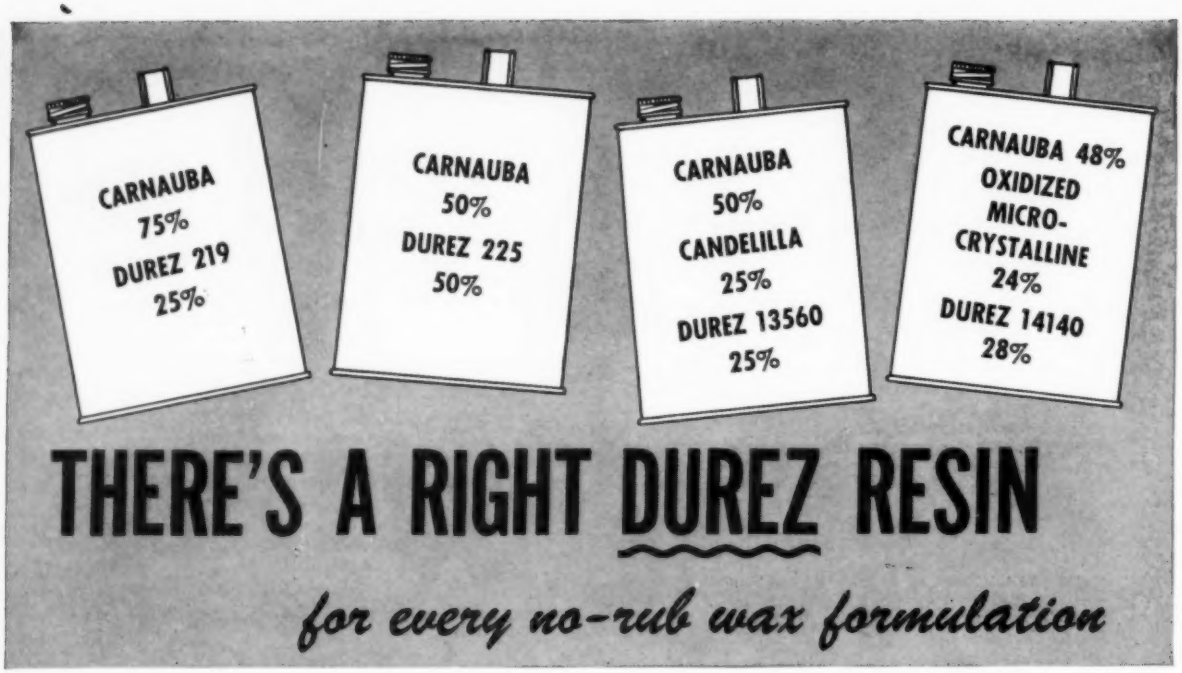
W-10—"Silicones in Waxes and Polishes"—C. W. Todd, Dow-Corning Corp., Midland, Mich.

W-11—"Syrex—A New Synthetic Wax"—L. W. Leish, Velsicol Corp., Chicago, Ill.

W-12—"Centrifugal Clarification of Waxes and Varnishes"—C. M. Ambler, Sharples Corp., Philadelphia.
Committee Reports.
Unfinished Business.
New Business.

6:00 P.M. Cocktail Party—North Ballroom.

7:30 P.M. Informal Dinner and Show—Grand Ballroom.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Durez terpene phenolic resins are very widely used as raw materials in no-rub wax formulations, in which they serve to reduce the cost of the finished product while enhancing its most desirable properties.

The preference among manufacturers for these resins is the result of a program of research and development initiated by our research laboratories some ten years ago, when it became desirable to find effective replacements for vegetable waxes. Having inherent properties that are especially suitable in wax-resin blends, these were the first resins to offer a high degree of compatibility with carnauba and microcrystalline waxes.

EXCELLENT PROPERTIES—LOW COST

Durez resins are considered to be unsurpassed in their ability to effect a combination of hardness and slip resistance in bright-drying emulsion type polishes. Properly formulated polishes containing these resins have excellent stability, gloss, water resistance, and wearability. With their low cost as an added advantage, they have been used in millions of gallons of polish. They are generally employed in concentrations of from 25% to 50% of the total wax and resin portion of the emulsion.

HIGH AND LOW MELTING TYPES

Durez 219 resin is a high-melting type (135°C)., emulsifiable and compatible with both vegetable and mineral waxes. Similar in all respects to this resin is Durez 225, except that it is even harder, higher melting, and produces harder films with less tack. The hardening properties of both resins, especially 225, are used to particular advantage in formulations containing oxidized micro-crystalline waxes.

In order to bring the melting point within the range of the average wax kettle, Durez resins are also furnished in a modified form suitable for use in steam-jacketed equipment. These resins are Durez 13560 and 14140, with a melting point of about 100°C.

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Our Customer Service Laboratory will be glad to consult with you on your requirements. From our laboratory and field experience we have gathered some practical suggestions for formulating emulsions and controlling properties. Write Durez Plastics & Chemicals, Inc., 412 Walck Rd., North Tonawanda, N. Y.

PHENOLIC RESINS THAT FIT THE JOB

Quaternary-Type

Detergent Sanitizers

on the Dairy Farm

By Russell G. Puhle*

Tykor Products Div., Borden Co.

DURING the past decade the dairy industry has viewed with increasing alarm a steady general rise in the level of bacteria counts of pasteurized milk and milk products. This condition has been exhaustively investigated and as a result it is today generally accepted that this trend may be predominantly attributed to the following two factors:

1. An increasing preference for the high temperature-short time method of pasteurization, which method has proved less effective than the older, low-temperature holding methods, in reducing the population of thermoduric (heat resistant) bacteria.
2. Improved bacteriological methods for detecting the presence of thermoduric organisms.

When it is further considered, however, that the presence of thermoduric organisms in pasteurized dairy products is generally recognized as an indication of unclean milk handling equipment—especially milking machines—one can easily sense the intense concern the dairy industry attaches to the problem and all it implies. (1)

That the Industry has directed "much manpower" and expense towards solving this thermoduric problem, goes without saying. That results on the whole have been most disappointing, is a matter of record. Time and again costly and intensified quality improvement programs have been instituted that resulted in gratifying initial improvement, but once the pressure of the program was relaxed, the level of thermoduric counts again soared. This pattern of results simply indicates that the degree to which these organisms are to be permanently controlled is directly proportional to the degree to which we are able to induce the dairy farmer to follow continually and carefully recommended sanitization procedures. Based on this knowledge, it then becomes apparent that the dairy industry must somehow compensate for the human factor if it is to obtain more permanent results.

Borden's attention was first directed to the use of a combined cleaner-sanitizer as a possible means to this end when DuBois in 1945 filed application for patent on a detergent sanitizer formulation. (2) This formulation was based on a combination of a quaternary ammonium compound, non-ionic detergent and various detergent alkalies. It appeared that if it were possible satisfactorily to clean and sanitize milk handling equipment with one solution and in one simple and easy labor saving operation, considerable progress would have been made in our efforts to cope with the human element in dairy farm milking equipment sanitization. Consequently, to test this theory, a simple field trial was run with the DuBois material. The results obtained in this trial were of sufficient promise to induce the Tykor Products Division of The Borden Company to negotiate an agreement with the patent assignees whereby this division would reduce the formulation to commercial practice. However, it was subsequently to be learned, to our great disappointment, that the skepticism displayed toward products of this type by various regulatory agencies, sanitarians and even dairy plant operating personnel, was such that effective distribution was well nigh impossible. During the latter part of 1946 and the early part of 1947, in the State of New York, however, considerable publicity was being given to the fact that various quaternary ammonium compounds and, especially detergent sanitizers based on them, had been found to be greatly effective in inhibiting the growth of thermoduric bacteria on farm equipment. The force of this publicity and the dire necessity that something be done immediately about the thermoduric problem which was becoming more serious combined, no doubt, to convince New York State regulating authorities finally to permit the more extensive field testing and eventually the commercial distribution of such products. Consequently, during the past four years, many interesting studies have been run to enhance our general knowledge of such products as well as to provide a true index to their potential for milking equipment sanitization. (3), (4), (5), (6)

Field Trials

THIS paper reports on a Borden study made under actual conditions of production to determine the value of quaternary-type detergent sanitizers for milking equipment sani-

* Before 37th annual meeting, Chemical Specialties Manufacturers Asn., New York, Dec. 4, 1950.

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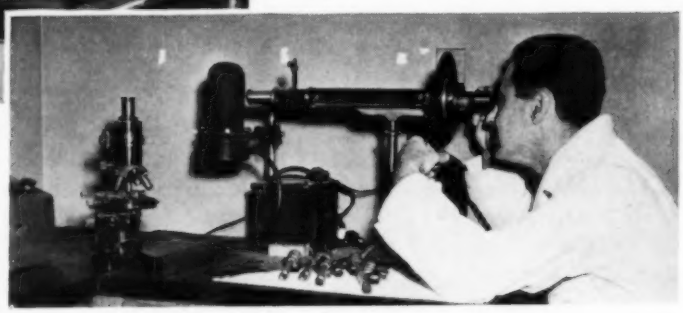

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TABLE I

Summary of Raw and Pasteurized Milk Bacteria Counts Obtained in Field Study I South Eastern New York—September-October, 1947.

No. of Dairies	*Detergent-Sanitizer Used*	*Avg. Counts Previous Four Montths*		*Av. Counts During Trial Period*		*Percent Reduction of Counts*	
		RAW	PAST.	RAW	PAST.	RAW	PAST.
36	A	105,000	24,300	37,600	4,120	64.2	83.0
13	B	63,800	39,800	47,900	5,500	24.9	86.2
12	C	116,000	61,400	51,800	2,140	55.3	96.5
12	D	77,600	28,800	16,200	1,500	79.1	95.0
73		92,900	31,800	36,000	3,430	61.2	89.2

tization. This study was composed of four separate field trials conducted under the very able direction of Richard T. Raymond, supervisor of laboratories for Borden Farm Products of New York, Division of The Borden Company.

The first of these trials was conducted during the months of September and October 1947, and included 73 dairies shipping to five different receiving stations or plants—all belonging to the New York City milk shed.

All dairies were selected on the basis of their bacteria records, particularly thermodurics, for the preceding four months. The dairymen's cooperation was solicited with the understanding that an experiment was to be conducted and that they would in no way be penalized if results were unsatisfactory.

Four different detergent sanitizers, all liquid products, were utilized in this first trial. Three of them were commercial products, one on experimental material. The four materials were distributed as follows: 36 dairies were given product A, 12 dairies product B, 12 dairies product C and 12 dairies product D.

Each dairyman was instructed to clean and sanitize his milking machines for the duration of the experiment as follows:

Instructions for Using Detergent Sanitizer

Morning Milking

1. Prior to milking flush unit with clear water.
2. Immediately after milking, flush unit with fresh, clear water.
3. Disassemble unit and place all parts in detergent sanitizer solution.
4. Brush all parts with solution and rack to drain dry—do not rinse.

Evening Milking

1. Prior to milking, flush unit with fresh, clear water.
2. Immediately after milking, flush unit with fresh, clear water.
3. Draw detergent sanitizer solution through milking unit, raising and lowering teat cup assembly for scrubbing action.
4. Drain and rack to dry — do not rinse.

Solution Concentration

Prepare detergent sanitizer according to manufacturers' recommendation. Use cold water for preparing solution.

After each dairyman had received material and instructions, samples were taken of each dairy's milk supply as nearly daily as was possible for a period of approximately one month. All samples were taken at the receiving station or plant in sterile, screw cap vials and immediately iced. The samples were then transported to the laboratory where they were examined for both raw milk and pasteurized milk bacteria counts. All raw milk counts were obtained microscopically so as to conform to New York City Health Department standards. Pasteurized milk counts were obtained by laboratory pasteurization of samples (143° F. and 35 minutes) and plated according to the Modified Plate Count Method. (7)

Subsequent field trials were conducted in a manner quite similar to that of the first. The number of dairies included in each test and their locale, however, did vary from trial to trial as did the number and brand of detergent sanitizer utilized. Some detergent sanitizers were liquids while others were powders. The records of past bacteria performance utilized in trials III and IV were based on periods of 12 and six months, respectively, rather than on a four month period as was the case in the first two trials.

The bacteriological results obtained in each of the four trials are given in tables I to IV, respectively. For true comparison, average counts reported in all tables were geometrically derived.

Examination of these tables shows that in each trial, each and every producer-group, irrespective of the particular detergent sanitizer used.

TABLE II

Summary of Raw and Pasteurized Milk Bacteria Counts Obtained in Field Study II South Eastern Vermont—October-November, 1947.

No. of Dairies	*Detergent-Sanitizer Used*	*Avg. Counts Previous Four Montths*		*Av. Counts During Trial Period*		*Percent Reduction of Counts*	
		RAW	PAST.	RAW	PAST.	RAW	PAST.
2	A	119,000	93,300	28,500	1,640	76.0	98.2
12	C	89,100	24,300	43,200	2,110	51.5	91.3
12	D	42,200	24,800	16,600	1,660	60.7	93.3
26		64,500	27,200	26,900	1,850	58.3	93.2

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TABLE III

Summary of Raw and Pasteurized Milk Bacteria Counts Obtained in Field Study III South Central New York—April-May, 1948.

No. of Dairies	*Detergent-Sanitizer Used*	*Avg. Counts Previous Twelve Montths*		*Avg. Counts During Trial Period*		*Percent Reduction of Counts*	
		RAW	PAST	RAW	PAST.	RAW	PAST.
1	A	65,300	65,300	164,000	1,740	+151.1	97.3
10	C	45,700	12,900	26,600	1,930	41.8	92.8
11	E	69,200	24,800	42,200	2,450	39.0	90.1
24	F	226,000	41,200	30,600	2,510	86.5	93.9
14	D	66,800	17,600	40,700	2,100	39.1	88.1
60		98,900	25,100	34,700	2,340	64.9	90.7

Note: + indicates percent increase.

produced milk of high quality. This quality production was attained through substantial reduction of both raw and pasteurized milk counts. Reduction in the level of thermoduric counts bordered on the spectacular. The explanation for this apparent specificity against thermoduric bacteria must lie in the high degree of bactericidal or bacteristatic activity the quaternary ammonium compound possesses against the gram-positive micrococci and thermoduric streptococci. When it is considered that most contaminating bacteria found in milk and on milk utensils are gram-positive, this phenomenon of specificity should reflect a high potential for these compounds for purpose of dairy farm milk handling equipment sanitization.

Question might be made of the fact that the degree of reduction attained in raw milk counts not only failed to approximate that obtained in pasteurized milk counts, but also varied considerably. This condition was not wholly unexpected since it was recognized that certain other milk quality affecting factors, such as cooling for example, would have more pronounced bearing on raw milk counts than on pasteurized milk counts. Very few bacteriological examinations made during these trials showed evidence of the presence of fluorescent *Pseudomonas* species of bacteria. This is highly significant since one such organism, *Pseudomonas aeruginosa* is a recognized cause of mastitis.

Although water hardness was not a factor in selecting producers for these trials, the water supply of the various farms is known to range in classification from soft to medium hard. This being the case, it should be observed that practically speaking, the bactericidal effectiveness of these compounds does not appear to be affected.

The inspection of milking equipment of farms on trial, in general, gave evidence that a highly satisfactory level of cleaning was being attained. No slime or milkstone accumulations on metal or rubber parts of equipment was observed. In fact, several of the products appeared to have actually removed light stone deposits that existed at the start of the trials.

The dairymen's personal reaction to the detergent sanitizer method of sanitization was found to be highly favorable. The very gratifying bacteriological results obtained, of course, were most impressive. The simple, easy and labor saving method of application was agreed to be the next most important advantage of such products. Properly used, the difference in cost of utilizing such products as compared with the cost of using conventional materials and methods was not significantly different. Many producers derived further advantage from the use of these products by dumping used solutions of the detergent sanitizer into their cooling tanks to eliminate the formation of slime and the development of undesirable odors.

On the basis of results obtained in these trials, Borden Farm Products Division adopted a policy of recommending the use of such products to those of its producers possessing a poor thermoduric record. Many other producers have voluntarily chosen to

TABLE IV

Summary of Raw and Pasteurized Milk Bacteria Counts Obtained in Field Study IV South Central New York—October-November, 1948.

No. of Dairies	*Detergent-Sanitizer Used*	*Avg. Counts Previous Six Months*		*Avg. Counts During Trial Period*		*Percent Reduction of Counts*	
		RAW	PAST.	RAW	PAST.	RAW	PAST.
12	G	96,600	21,100	33,900	3,200	64.9	84.8
12	H	76,700	22,600	25,700	3,020	66.5	86.4
18	I	67,600	25,400	37,200	2,790	45.0	89.0
16	D	58,200	24,800	36,300	1,760	37.6	92.9
58		71,600	23,700	33,900	2,540	52.7	89.3

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use them, until today, the number of producers using detergent sanitizers constitutes a substantial percentage of all producers supplying this Borden Division. In a survey made in February of this year, it is revealed that out of 3,504 dairies, 1,168 or 33.3 per cent, were using quaternary detergent sanitizers.

Long Term Application

MORE recently, another survey was made to determine what effect these products have had on the general bacteria performance record of this Division since they were first introduced. These data are contained in Tables V and VI and should prove very interesting to those who were fearful as to the ability of such products to perform satisfactorily over a long period of time.

Table V shows the average raw milk and pasteurized milk counts of all dairies for the month of August for the past four years. The month of August was selected because it is the time of the year when milk counts are at their highest. From the table it will be noted that the quality of milk produced has been improved considerably since 1947.

Table VI gives the annual record of all dairies during this time. The same general trend in milk quality improvement is indicated.

To determine more sharply what effect detergent sanitizer sanitization had on milk quality, the thermoduric counts of those 1,168 producers using such products during the ten months period immediately preceding February 1, 1950, were averaged. These averages are reflected in Table VII. When they are compared with the averages of all producers as contained in Table V and VI, there should be no question as to the part quaternary detergent sanitizers played in improving the general quality of all milk produced.

Conclusion

In closing we should like no point out that the study reported by this paper is but one of many detergent sanitizer evaluation studies conducted throughout the country over the past three or four years. Although conditions under which each was conducted varied considerably, the general pattern of results obtained has been similar in that quaternary sanitizers did prove most effective in improving milk quality. Further, in certain sections of the country where compounds of this type have been used with approval for the past few years, records attest to their great value in quickly improving milk quality, and what is more important, maintaining it at a high level. On the basis of this experience then, it would appear that the dairy industry should recognize that at long last it has at its disposal a possible means of coping with the human element in its drive to improve the standard for dairy farm milking equipment sanitization.

TABLE V

The Average Bacteria Record For All Dairies of Division During Months of August, 1947-1950 Inclusive

Month	*Year*	*% Raw Counts over 150,000*	*% Thermoduric over 20,000*	*% Thermoduric 10,000-20,000*
August	1947	16.9	25.2	10.8
August	1948	14.7	13.6	9.8
August	1949	10.8	10.8	8.5
August	1950	11.8	10.8	9.9

TABLE VI

The Average Bacteria Record For All Dairies of Division 1947-1950 Inclusive

Year	*% Raw Counts over 150,000*	*% Thermoduric over 20,000*	*% Thermoduric 10,000-20,000*
1947	12.6	18.3	9.1
1948	10.6	12.0	7.9
1949	8.5	8.6	6.8
1950 (1st 8 mos.)	9.4	8.2	7.9

TABLE VII

The Average Thermoduric Bacteria Record of Dairies of Division Using Detergent Sanitizer Procedure for 10-Month Period Immediately Preceding February 1, 1950.

Total	*Good Under 10,000 Count*	*Fair 10,000-20,000 Count*	*Poor Over 20,000 Count*
1,168	1,086 (93.0%)	61 (5.2%)	21 (1.8%)

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Canco Sales Changes

The appointment of E. K. Welsh as assistant general manager of sales and the naming of B. R. Wood to succeed him as manager of sales for the Atlantic division were announced recently by American Can Co., New York. At the same time, it was announced that G. F. Henschel, formerly a sales division manager in the Atlantic division, has been named to post formerly held by Mr. Wood.

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Johnson dedicates

Wax Research Laboratory Tower

DEDICATION of its 153-foot high research and development tower, one of the most unusual laboratories of its kind, took place at the plant of S. C. Johnson & Son, Inc., Racine, Wis., Nov. 17. Designed by Frank Lloyd Wright, the tower has hanging walls of brick and horizontal glass tubing, all supported by a hollow steel-reinforced concrete core. The glass walled building contains 15 stories.

Dedication ceremonies were witnessed by a number of scientists, educators and industrial leaders from all over the U. S. They toured the building and attended a luncheon at which Herbert F. Johnson, president and grandson of the founder, introduced Mr. Wright and Dr. J. Vernon Steinle, research and development vice-president of the firm. The principal speaker was Dr. Roger Adams, head of the chemistry department of the University of Illinois, who set forth the specifications which a research laboratory must meet in order to be a profitable and indispensable unit in a modern business organization.

Before and after lunch, visitors were shown how Johnson employs raw materials used to make polishes for floors, automobiles, furniture, as well as coatings for industrial purposes.

The new Johnson wax research tower contrasts dramatically with the surrounding two and three story buildings, also designed by Mr. Wright. The central core of the tower is circular with channels for the elevator shaft, a circular stairway and for pipes, wiring, fume exhausts and ventilating ducts. Floors are in pairs, 40-foot square floors alternating with circular floors of slightly less diameter, an arrangement which permits the installation of tall laboratory equipment and facilities communication. For that reason, circular floors are revealed from the outside as large balconies, almost like mezzanines, which can be seen clearly through the Pyrex glass tubing. Narrow strips of brickwork mark the square floors and provide the only breaks in the glass surfaces. The glass tubes, two inches in diameter, are separated by specially molded synthetic rubber insulating strips. Aluminum uprights

(*Turn to Page* 167)

The 15-story tower which dominates this group of buildings at Racine, Wis., is the new Johnson Wax laboratories where basic research will be carried out and new wax products developed.

First picture of the entire group of buildings at Racine, Wis., designed by Frank Lloyd Wright for S. C. Johnson & Son. At left is the unique 15-story research and development tower.

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Shampoos

(*From Page 43*)

after such a soap has been completely formed, from 0.5 to 3.0 per cent of sodium or potassium tetrapyrophosphate be added. After chilling for at least 24 hours, the mixture is filtered.

Another modification, recommended by the producers (19) of triethanolamine, is as follows:

	Parts
Coconut oil fatty acids	42
Oleic acid	56
Propylene glycol	55
Triethanolamine	58

Mix the fatty acids, add the amine and then the propylene glycol. Stir until a clear solution is obtained. No heat is required. Dilute with water to any consistency desired; a mixture of one part of base with three parts by weight of water yielding an "excellent" shampoo. When the water is first added, the shampoo concentrate assumes a petrolatum-like consistency, and gradually changes to a clear, slightly viscous solution of pale amber color. If the aqueous solution is cloudy, stir in a little more of the amine, a little at a time, until it becomes clear.

THE third method of liquid soap formulation requires the dilution of a concentrated soft soap. Noting that there are many soft soap formulas in the literature, Jannaway (5, 20) advises that those unskilled in soap making might do well to purchase a ready-made coconut soft soap. Mixed with a little ready-made olive oil soap, the combination gives an excellent shampoo when dissolved in water or a mixture of water and alcohol.

He notes that a typical soft soap shampoo base consists of coconut oil and castor oil saponified with caustic potash and containing an additional three to 15 per cent of glycerine. He also calls attention to the fact that soft soap shampoo bases are more easily prepared by the neutralization of distilled fatty acids than by direct saponification of natural fats and oils.

Aside from their use in the preparation of liquid shampoos, such bases may also be used for making shampoo jellies, containing about 30 per cent of anhydrous soap, for retail outlets. In higher concentrations, up to 60 per cent soap content, they are suitable for sale to beauty parlors for subsequent dilution by the hairdresser.

For those desiring more specific data on the formulation of shampoo jellies, the following procedure for making a transparent product will be illustrative: (9, 15)

	Parts
Coconut oil (low free fatty acid)	270
Potash lye (38°Be.)	209
Glycerine	204
Water, distilled	36
Perfume	7
Yellow soap color	sufficient

The coconut oil is saponified in a jacketed mixer by heat and agitation. The glycerine may be added during the heating. Samples should be taken and chilled to check their transparency. If cloudy, slight additions of lye or glycerine may cause clarification. Filling is done while the shampoo is still warm enough to be fluid.

(To be concluded. Part II including a discussion of Synthetic Detergent Shampoos, Cream Shampoos, etc. will follow in the next issue. Complete bibliography for both Parts I and II follows herewith.)

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TGA Meets May 15-17

The 1951 annual meeting of the Toilet Goods Association is to be held May 15-17, at the Waldorf-Astoria Hotel, New York.

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SANITARY SUPPLIES MANUFACTURERS FOR DISTRIBUTORS — JOBBERS — WHOLESALERS

New Patents

(*From Page 89*)

to occur before the material leaves said zone.

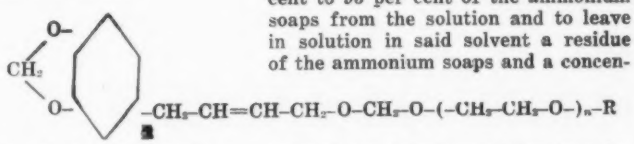
No. 2,519,190. Polyhalogenated Polycyclic Hydrocarbons and Insecticides Thereof, patented by Julius Hyman, Chicago, Ill., assignor to Velsicol Corp., Chicago, Ill., a corporation of Illinois. The patent covers a halogenated hydrocarbon being a derivative of 4,5,6,7,8,8-hexahalo-3a,4,7,7a-tetrahydro-4,7-methanoindene containing from one to three more halogen atoms attached to carbon atoms in positions 1 to 3 of said derivative, no one carbon atom in positions one to three having more than one halogen atom.

No. 2,519,088. Aqueous DDT Paste, patented by Isaac F. Walker, Hockessin, Del., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del., a corporation of Delaware. An aqueous water-dispersible paste is covered, comprising a blend of ingredients comprising water, finely-divided DDT of at least technical grade in purity in amount of at least 50 per cent of said paste, a surface-active agent in amount of from 0.1 per cent to 10 per cent by weight of the DDT, and polyvinyl alcohol in amount of from 0.2 per cent to 10 per cent by weight of the water and in amount sufficient to give to the aqueous phase, exclusive of said surface-active agent, a viscosity of at least 10 centipoises at 25° C., said polyvinyl alcohol having a viscosity of at least 10 centipoises in 10 per cent aqueous solution at 25° C.

No. 2,518,191. Method for Granulating DDT, patented by Norman E. Searle and Albert L. Flenner, Wilmington, Del., assignors to E. I. du Pont de Nemours & Co., Wilmington, Del., a corporation of Delaware. The patent covers a process for granulating DDT which comprises dispersing fused DDT in water at a temperature above the fusion point of the DDT with the aid of an emulsifying agent, cooling the dispersion thus formed with agitation to a temperature of at most about 55° C., and regulating the cooling rate of the dispersion so that at least ten minutes are required to cool thru the range of 85° C. to 70° C.

No. 2,521,318. DDT Suspension, patented by Herbert C. Wohlers and Thomas C. Davis, St. Louis, Mich., assignors to Michigan Chemical Corp., St. Louis, Mich., a corporation of Michigan. In a method for the preparation of a water-dispersible parasiticidal concentrate, the patent describes the following steps which include: melting DDT in quantity at least about 37 percent by weight of the total concentrate, an emulsifying agent which is a non-ionic ether-type agent, containing ether groups as the hydrophylic part of the molecule, and, if hydroxyl groups are present, at least one ether group per hydroxyl group, and oil in a quantity not less than about 37 percent by weight of the DDT, at least a portion of said oil being a DDT solvent oil, the combined DDT and oil representing from about 50 to 75 percent by weight of the total concentrate, mixing the liquid with agitation with from about 25 to 50 percent of water by weight of the total concentrate, said water being at a temperature above about 90 degrees centigrade, and colloidizing and cooling the emulsion thus produced to form a suspension of solid DDT particles.

No. 2,521,366. Insecticidal and Synergistic Products, patented by Oscar F. Hedenburg, Pittsburgh, Pa., assignor, by mesne assignments, to Rex Research Corp., Toledo, O., a corporation of Delaware. The new organic chemical product is covered having the structural formula:



in which R is an alkyl radical having from one to four carbon atoms and n is an integer from one to two.

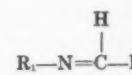
No. 2,517,636. Composition for Removing Fingerprint Deposits from Nonabsorbent Surfaces, patented by Werner David, Chester, England, assignor to Shell Development Co., San Francisco, Calif., a corporation of Delaware. A clear soluble uniphase liquid composition adapted to remove fingerprint deposits from nonabsorbent surfaces is covered consisting essentially of about 45 per cent to 70 per cent by weight of a clear soluble oil, about 10 per cent to about 37.5 per cent by weight of water and about 15 per cent to about 50 per cent by weight of a substantially volatile, liquid, organic compound selected from the group consisting of benzene, trichloroethylene and carbon tetrachloride, said clear soluble oil consisting essentially of the following components in proportions by weight as follows: Spindle oil—55, sodium naphthasulfonate—30, sulfated fish oil—5, water—5, diacetone alcohol—5.

No. 2,519,747. Detergent Composition, patented by Adrien Servule Du Bois, Jersey City, N. J., assignor to Onyx Oil & Chemical Co., a corporation of Delaware. A detergent sanitizer composition in the form of a free-flowing powder is covered consisting essentially of the following ingredients in the following parts by weight:

Sodium carbonate, 45 parts;
Tetra sodium pyrophosphate, 45 parts;
Nona-ethylene glycol mono ester of soya bean fatty acids, 6.3 parts; and
Oleyl dimethyl ethyl ammonium bromide, 3 parts.

No. 2,523,794. Separation of Unsaponifiable Materials from Free Fatty Acids, patented by Henry A. Vogel, Milwaukee, Wis., assignor to Pittsburgh Plate Glass Co., Allegheny County, Pa., a corporation of Pennsylvania. In a process of obtaining a concentration of sterols that occur in a natural fat from a mixture comprising (A) the ammonium soaps of the fatty acids and (B) the sterols of said natural fat, the patent describes the steps of dissolving 1 part by volume of the mixture in 3 to 12 parts by volume of an organic solvent of fatty acids, which is also a solvent of the ammonium soaps and the sterols, then chilling the resultant solution of ammonium soaps, sterols and solvent, selectively to crystallize out 50 per cent to 95 per cent of the ammonium soaps from the solution and to leave in solution in said solvent a residue of the ammonium soaps and a concentrate of the sterols, washing the solution with water selectively to remove the residue of ammonium soaps and to leave the sterols in solution in said solvent, and evaporating the solvent from the solution of sterols to obtain said concentrate.

No. 2,522,311. Insecticidal Compositions, patented by Herschel G. Smith, Wallingford, Mark L. Hill, Boothwyn, and Troy L. Cantrell, Lansdowne, Pa., assignors to Gulf Oil Corp., Pittsburgh, Pa., a corporation of Pennsylvania. An insecticidal composition is patented comprising the toxicants 2,2 bis (parachlorophenyl)-1,1,1-trichloroethane and pyrethrins, a solvent therefor, and a small but stabilizing amount of an azomethine compound having the following formula:



wherein R_1 and R_2 represent aromatic groups.

Ind. Raw Mats. to Move

Industrial Raw Materials Corp., New York, has announced recently plans to move to new and larger quarters at 575 Madison Ave.

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A.A.E.E. Branch Meets in Philadelphia

THE 22nd annual meeting of the eastern branch of the American Association of Economic Entomologists was held at the Warwick Hotel, Philadelphia, Nov. 20 and 21. The group elected F. H. Lathrop of the Maine Agricultural Experiment Station as chairman of the branch for the coming year. Floyd Smith of the Truck Crop Insect Division B.E.P.Q., Beltsville, Md., was named vice chairman. B. F. Driggers of the New Jersey Agricultural Experiment Station, New Brunswick, continues as secretary-treasurer.

A paper of considerable interest to insecticide manufacturers delivered at the meeting was one by David Pimentel of Cornell University entitled, "New Treatment Methods For House Fly Control in Dairy Barns." One hundred and seventeen dairy farms were treated during the 1950 season by three methods: Spraying the entire barn; spot treatment; and using a new strip treatment method in which wire strips are sprayed outside the barn with concentrated insecticide solutions, then hung from the roof of the barn. (This, incidentally, was the first time the strip treatment method had been used in dairy barns.)

Of the various insecticides tested, dieldrin gave outstanding results, controlling flies throughout the fly season. There was also complete freedom from milk contamination. The strip treatment gave effective control for over 16 weeks. When the entire barn was sprayed, five week control was attained. The spot treatment gave ten weeks control, being more effective than the over-all treatment, and with less chance of milk contamination, but not as satisfactory in either respect as the strip treatment. Another suggested advantage in the strip treatment is that there would seem to be less chance of resistance developing, since flies never contact a sub-lethal dose.

Philip Granett and Harry L. Haynes of Rutgers University, presented a paper, "Further Evaluation of Butoxy Poly Propylene Glycol as a Fly Repellent for Dairy Cattle." They reported on two years of testing with formulas containing butoxy poly propylene glycol alone and with pyrethrins, pyrethins plus synergist, allethrin and "Thanite" against horn, stable and house flies.

Combinations containing about five to ten percent butoxy poly propylene glycol 800 were found to be highly effective on the day of application in repelling flies. Protection generally dropped off the following day. Emulsions were reported to be as effective as oil base sprays.

Another paper by Philip Granett and Carl F. French of Rutgers University reported on "Further Tests of Dibutyl Adipate as a Tick Repellent." At two grams of the chemical per square foot of cloth up to seven weeks effective protection was attained. (98% protection in the seventh week). The product was tested on coveralls and proved to withstand some washing.

Aerosol application on trousers was also tried and resulted in up to three weeks protection with a five or fifteen percent aerosol, applying approximately one gram of dibutyl adipate per square foot of cloth. n-Hexyl Mandelate also gave effective control, but is apparently impractical for commercial application because of the toxicity problem.

Tests were also conducted to check on the efficiency of various combinations in protecting dogs from tick infestations. These experiments were rather unsatisfactory as no protection was attained beyond one to two days.

◆

Continental Names Three

The appointment of Frank I. Gill to the post of manager of sales, central division, for Continental Can Co., New York was announced recently. Mr. Gill, formerly general line sales manager, central division, has been with Continental since 1928.

At the same time it was announced that Wilson B. Larkin has been elevated to general line sales manager, central division. A veteran of 25 years with the can company, Mr. Larkin was district sales manager for the Chicago city district previously.

Norbert M. Potts has been named Chicago city district sales manager. He has been with Continental for 21 years, and was formerly district sales manager for Kansas City.

◆

Walsh to Alter Claims

Walsh Laboratories, Inc., Chicago, were recently ordered by the Federal Trade Commission to stop representing that the preparation they sell under the name "Rodan" is an effective killing agent for mice or rats, other than brown rats. The firm is ordered further to stop claiming that "Rodan" will destroy all rats on infected premises and will not harm domestic animals and poultry.

Also prohibited is the use of the word "manufacturing chemists" in connection with the corporate name, or otherwise representing that the company manufactures or compounds chemicals or has chemists in its employ.

◆

Blaw-Knox Appoints

H. L. Barnesbey has recently been appointed manager and Sanford R. Bell process engineer for the chlor-alkali department of Blaw-Knox Company's chemical plants division, Pittsburgh. This department of the company is active in the design and construction of chlorine-caustic plants based on the Mathieson mercury cell and processes employing amalgam to produce hydrogen peroxide.

◆

F.T.C. Cites See-Jay

See-Jay Exterminating Service, Oklahoma City, recently has agreed to comply with a Federal Trade Commission order to stop representing: That "See-Jay 52" roach powder will eliminate roaches or prevent roach reinfestation, or that it is non-poisonous; that "See-Jay API" is an exterminator and is effective against bedbugs, ants, fleas, lice and other insects; that either of the products is "guaranteed" unless clear and unequivocal disclosure is made in direct connection therewith of what is offered by way of security for the guarantee.

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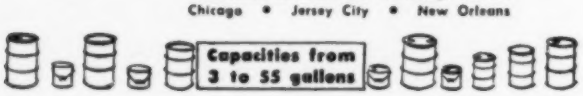

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KOPPERS

House Fly Control

(*From Page* 120)

spectively. .3 to .5% concentrate.

10. In rooms in which food is handled, it is generally safest to spray or fog with pyrethrum or allethrin with a suitable synergist. These materials to be applied as a space spray. Residual sprays are useful in rooms where foods are not actually handled.
11. In all spraying operations in homes or food establishments avoid contamination of food utensils and working surfaces.
12. Start the fight against flies before they appear next spring by a general clean up of breeding places.
13. Keep all city garbage dumps as sanitary fills, and spray exposed parts of the dumps with DDT or other effective materials.
14. Do not use the same material as a larvicide as is used as a residual spray.
15. For a quick knock-down of adult flies in an emergency area operation, use mist blowers or fog equipment.
16. Use manure pits or fly-tight manure boxes if the manure cannot be spread on fields as often as twice a week.
17. Employ conical fly traps as a supplement to clean-up and spraying. Bait and employ traps properly. (See U. S. Department of Agriculture F. B. No. 734).
18. Full cooperation of everyone is essential if our 1951 campaign against flies is to be a success.

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Chicago Market

(*From Page* 125)

another 80 or 90 for extra work arising then. General Supervisor of the Park District's division of buildings and facilities operations is Sam Pecoraro. Under him is a beach and pool section, a golf section and six building operating supervisors, five of whom have regional jurisdiction over local park janitor staffs. The sixth, Arthur E. Edwards, is responsible for floor maintenance and "spring housecleaning" throughout all parks. So extensive are the District's sanitary maintenance operations that space is lacking for detailed reports on all phases of the program.

That sanitary chemicals figure largely in the task is evident from these items, partially covering last year's purchases: green oil soap—10,779 pounds; detergents — 3,861 pounds; powdered soap in drums for mopping—7,252 pounds; powdered soap for washing cement floors—1,152 two-pound packages; waxes—2,535 gallons; floor seals—495 gallons; gym seals—1,129 gallons. Floor maintenance machines of different makes are also purchased, but after employees, in a popular referendum, expressed strong preference for one type which is an efficient scrubber, buying of machines has been standardized on this particular make.

For swimming pool water treatment chlorine, soda ash, aluminum sulfate and copper sulfate are bought. Use of chemical foot baths has been discontinued because, it is claimed, tests showed these baths to be sources for spreading infection.

DDT aerosol bombs are used in the control of spiders and mosquitoes in beach houses, with other insecticides used elsewhere. Baits for mice, cyanide gas and red squill for rats and a .22 rifle for the exterminator to use on rats around the Zoo's outdoor bird rookery, where poison baits can't be utilized, are other items on the list of purchases. Notably absent from the list are deodorants, which Mr. Edwards explained, are not needed, because toilets are cleaned promptly and efficiently, so odors are stopped at the source. (The milennium seems to have arrived in Chicago. Ed. Note) Deodorants have not been bought since 1938. Also, no floor sweeping compounds are used.

Purchases are made through the District's central buying office, which lets contracts on specifications set by their testing laboratory. Vendors file their names with the purchasing department, with requests for notice of bids for their type of products. The classified telephone directory is also checked to enlarge this list and when purchases are being made, notices are mailed to all parties on the list. On purchases of $1,000 or over, the park commissioners award the contract, after selecting the lowest bidder meeting specifications. Purchases under $1,000 are handled similarly by the purchasing division.

Explaining his sanitary maintenance program, Mr. Edwards said he has fifteen men in three crews, who enter each park building at least once a year. Floors are washed, refinished and waxed; windows, Venetian blinds and toilet partitions are washed and some wall washing is done, so far as union rules permit.

After finishing the job, the local park janitor staff is assembled and told just how to carry on to maintain the status quo as of the moment. If work has been improperly done during the past year, the reasons for any faults uncovered are explained and corrective instruction imparted. Meanwhile, inspectors from downtown drop in frequently over the year to check on daily performance.

From last April's report, these crews during that month refinished 158,000 square feet of flooring of all types in various parks. At Gage Park the cement basement floor of 23,159 sq. ft. area was scrubbed twice, given a coat of penetrating seal, then a wax finish coat. In the library the 992 sq.

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ft. of maple flooring was scrubbed twice, given two coats of penetrating seal and two wax coats. The girls' gym, with 3,645 sq. ft., got two scrubbings and two gym seals, as did the boys' gym of the same size. Corridors, stairs and other areas also received appropriate attention.

Materials used at Gage Park included 20 lbs. of TSP; 7 lbs. of soap powder; 90 gals. of gym seal; 20 gals. of wax; two mop heads, three steel wool pads, three lambs' wool applicators and some benzene for cleaning the latter after use. Cost of the job, including labor, materials and management charge, was .026 cents per square foot. In other buildings, Mr. Edwards said, this figure may vary slightly either up or down.

In former years, he said, it has been the practice to sand all floors until they wore so thin they became dangerous and had to be replaced. Since starting the modern floor maintenance program, not a floor anywhere in the district has had to be ripped out and replaced, except for fire or flood.

Much of the credit for the excellence of the sanitary maintenance program is due to the formal "Cleaning Institutes" for employees, held under Mr. Pecoraro's direction. Not later than thirty days after being hired, all new employees are required to attend their first school, while once a year, veteran employees, both men and women, take a refresher course to review past training and catch up on new developments. Faculty members for these institutes include the building operating supervisors, each of whom teaches a particular phase of cleaning. On completion of the course written examinations are given and just to suggest what the cleaning crews are expected to know here are some topics touched on in one recent exam paper:

The proportions of soap and water to use in making a soap stock solution; where to look for a hidden odor in an apparently clean toilet room; why mops should be washed, rinsed and hung up after use; and—the quickest way to ruin a floor.

Floor maintenance crews are given a specialized course where they learn, among other subjects—what floors are made of; formulations of different cleaning compounds and the effect these have on different types of floors; how to apply soap with hot water and how to use it if only cold water is available. The training teaches them to avoid whipping up the soap solution and how to prevent it from spattering where it shouldn't; how to wield mops for best results with least physical effort; and what happens when mop heads are used to dig up heavy dirt. Also drilled on are methods of proper wax application, including where not to use it if public safety is involved.

"Dairy Cattle Fly Sprays"

"FLY control on dairy farms has always been a serious problem" writes Dr. M. H. Doner of J. R. Watkins Co., Winona, Minn. In his article: "Dairy Cattle Fly Sprays—Past and Present," appearing in the January issue of SOAP & SANITARY CHEMICALS, Dr. Doner discusses the basis for the development of new fly control chemicals today. He also recommends elimination of fly-breeding places as an aid in licking the fly control problem.

At Portage Park, Mr. Edwards said, the janitorial staff have applied their training know-how so effectively that floors have not required refinishing for four years.

Removing chewing gum from park building floors has always been quite a problem. Putty knives with edges wrapped in cloths to protect surfaces, will get some of it off, then a liquid floor reviver is applied to dissolve the rest. This material has also been found useful in removing rubber burns on gym floors.

Formerly a commercial floor reviver was used, until trouble developed. Samples tested up fine in the laboratory and in practical application, but goods delivered did not work out right, Mr. Edwards said, and floors began to deteriorate. So, a year ago, the Park District perfected a formula and began making its own floor reviver, which is mixed up by floor crews while waiting for floors to dry. The cost is 25 cents per gallon, where formerly $1.65 was paid and this year Mr. Edwards figures the saving will be over $4,500.

Another irritating problem is lipstick writing on women's toilet walls. The greasy dye of which it is made penetrates deeply into porous marble and while it can be removed from the surface, it continues to bleed, causing an unsightly appearance. To cope with this, experiments were started with carbon tetrachloride, ammonia and other chemicals, for removal of the marks, followed by application of terrazzo seals. In time it is hoped to come up with something sure fire, but meanwhile, in future park district construction, it is planned to use glazed tile in places where women might be inclined to scribble.

Earlier herein the opinion of sanitary supply salesmen voiced by Mr. Nelson, manager of the Field Building, was noted. What does Mr. Edwards of the Park District think of them?

"They're a fine, cooperative bunch," he said. "We've asked their advice many times on special problems and they always help us a lot. It's true that salesmen may put on the pressure, but you can't blame them. It's their job to sell their products. Most salesmen are honest and have confidence in their goods. If otherwise, our testing laboratory quickly exposes the bunk.

It's up to the buyer to know more about what he is buying and to show better judgment than he sometimes does. He ought to know better, for instance, than to use green soap for washing rubber tile floors, then blame the salesman for putting over a fast one, when his flooring breaks down. If the buyer knows what the cleaners are made of, and what can happen if the wrong product is used, he'll have no reason to complain about being taken in by smart salesmen."

Residual Control of Flies

Sprays of five per cent DDT solutions applied for residual control of houseflies were highly effective. A single application made at one quart per 240 square feet of surface resulted in a decrease of about 99.5 per cent; there were .9-2.0 flies in treated houses as compared with an average of 147 flies in untreated houses. *J. Med. Assoc. State of Alabama* 17, 357-8 (1948).

Greetings to Members of the C. S. M. A.

The Buckingham Wax Company greets all members and friends of the C.S.M.A. and congratulates them on their expanded program of activities, for the benefit of the industry, for the past year.

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TRADE NEWS

Powell Advances Straube

The appointment of Harold S. Straube as general manager of John Powell Chemical Co., Huntsville, Ala., was announced recently by H. Alvin Smith, president of John Powell & Co., New York. Previously he was in charge of all sales operations in the Southeast, having earlier been assistant sales manager of John Powell & Co., New York. In his new post Mr. Straube succeeds Benton H. Wilcoxon, who is devoting all his time to basic chemical manufacturing of an associated company, Calabam Chemical Co.

HAROLD S. STRAUBE

FRANK J. RUSH

Change in the New York Powell organization involves Frank J. Rush, who has been named assistant treasurer. Formerly he was comptroller for the Powell company.

New Aerosol Packager

The organization of Powr-Pak, Inc., 1488 Barnum Ave., Bridgeport, Conn., as a contract packager of aerosol products was announced during November by Edward Helfer. Products to be packaged at the plant, which it is expected will be in operation early in January, 1951, include insecticides, moth proofers, waxes, paints, toiletries, etc.

Goldberg USDA Advisor

Melvin Goldberg, who operates his own consulting and technical sales organization in New York under the name Pesticide Advisory Service, recently announced his appointment as a consultant on pesticide requirements, distribution and production, to the Production & Marketing Administration, U. S. Department of Agriculture. He will work on a full-time basis in an advisory capacity to the Office of Materials & Facilities of PMA in Washington, D. C. During World War II, Mr. Goldberg was associated with the Insecticide & Fungicide Unit of the War Production Board and the work of his present job with PMA will be along the same lines as his former activities with WPB.

Gemmell Joins Geigy

Louis G. Gemmell recently joined Geigy, Inc., New York, and will be located at the Bayonne Research Laboratory. His work is doing technical sales promotion for Geigy insecticides, fungicides, etc. Mr. Gemmell was formerly associated with Sherwin-Williams Co. and American Cyanamid Co., New York.

N. Y. NSSA Group Meets

A meeting of New York area members of the National Sanitary Supply Association was held Dec. 1, at the Martinique Hotel, New York. The special meeting, arranged for by Jacob Kahn of Windsor Wax Co., Hoboken, N. J., eastern regional vice-president of the NSSA, was to be attended by Al Candy, Jr., of Candy & Co., Chicago, president of NSSA. Several of the officers and directors of NSSA were also to be on hand.

The effect of government regulations on the sanitary supply business and any shortages were to be discussed at the meeting.

Hilex Resumes Production

Hilex Co., St. Paul, manufacturer of disinfectants and bleaches, has resumed production after its output was cut off for about a month because of strikes in the chemical industry. Although forced to halt production, the company kept its employees on the payroll during the shutdown to perform maintenance and repair jobs.

ACS to Discuss Aerosols

Dr. Lincoln T. Work, chairman of the American Chemical Society's Division of Industrial and Engineering Chemistry, announced that the society's 17th Chemical Engineering Symposium will be held at Johns Hopkins University, Baltimore, on December 28 and 29. Sponsored by the division, the meeting will discuss the production and application of sprays and aerosols. Papers dealing with the basic aerosol theory and techniques and data on the performance of equipment in commercial processes will be presented. Dr. E. W. Comings, professor of chemical enginering, University of Illinois, Urbana, is program chairman for the symposium.

Meyer Plant Addition

H. B. Meyer & Son, Dallas, manufacturers and distributors of janitor and sanitary supplies, have completed an addition to their plant. This will increase shipping and receiving facilities and provide greater manufacturing and warehouse space, it was announced.

The firm, headed by A. B. Meyer, has also also announced the development of a new liquid 100% chemical floor cleaner, "Pep-Sene."

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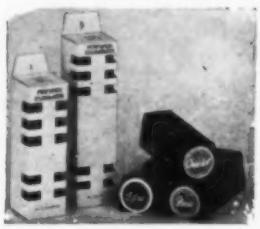

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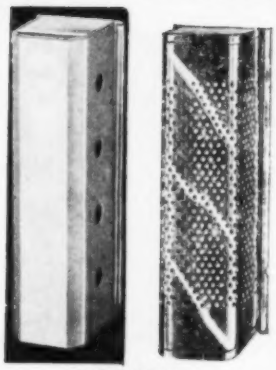

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PEA Reelects Huberman

Jacob L. Huberman of Scientific Exterminating Co., Bronx, has been reelected president of the Professional Exterminators Assn., at the annual meeting, Nov. 13, held at the American Museum of Natural History, New York. Also reelected were David Cantor of Bell Exterminating Co., New York, as vice-president; and William Farrell of Effective Exterminating Co., Brooklyn, as treasurer. Philip W. Friedman of Sanex Exterminating Co., Brooklyn, was elected to succeed E. T. Thorpe of Topps Exterminating Co., Brooklyn, as the new secretary. The board of directors elected at the meeting is composed of the following: Robert Bloch, Brooklyn Exterminating Co., Brooklyn; Kenneth Tompkins, Tompkins Exterminating Co., New York; Morris Feldman, Columbia Exterminating Co., New York, Raymond Sulzer, Gladius Exterminators, Bronx, and Samuel Diner, American Pest Control Co., Bronx.

Continuation of the education and public information program with regard to new techniques and pest chemicals in pest control in cooperation with the officials of the Department of Health of the City of New York and the United States was voted at the meeting.

P. J. LoBue Co. Moves

Philip J. LoBue, company head, Philip J. LoBue Co., New York, recently announced that he has severed connections with Michigan Chemical Corp., St. Louis, Mich., and has moved from the firm's New York office, 230 Park Ave., to new quarters of his own at 277 Park Ave. This move was made in order that Mr. LoBue might devote his full time to expansion and development of his own company.

At the same time, Mr. LoBue

PHILIP J. LOBUE

announced the appointment of Foster T. Smith, formerly of Merck & Co., Inc., Rahway, N. J., as sales manager for the company.

"Home-size" Banarat

"Banarat" rodenticide made by American Scientific Laboratories, Madison, Wis., is now being supplied to dealers in "home size" cans. These cans contain one quarter of a pound of "Banarat" for controlling small rat colonies or occasional strays, and for mice, which usually begin to feed after rats have disappeared.

"Banarat," which contains warfarin, also is packaged in half-pound cans. The new quarter-pound can makes five pounds of warfarin bait and retails for $1.75. The half-pound can retails for $3.00 and makes 10 pounds of bait.

New Texas DDT Plant

Construction of a new plant for the production of DDT is now under way in Houston, Tex., it was announced recently by Kolker Chemical Works, Inc., Newark, N. J. The plant is to operate in conjunction with the firm's BHC plant there. The new Kolker unit is understood to be the first DDT producing plant in the southwest. It is expected to expand greatly the company's output of DDT, which is also manufactured in Newark. Production at the new Houston plant will get under way early next year.

Supported Wax Research

Soap and Sanitary Chemicals carried an article in August 1950 by Miss Bernice Cummings, formerly of U.S. Testing Co., Hoboken, describing a method for measuring resistance of floor waxes to wear by use of radioactive isotopic techniques. The article did not credit Consumers' Research with financial support of the studies, and for its part in bringing about the development of the methods used. The study reported in Miss Cummings' paper was begun in 1949, and test engineers of Consumers' Research worked with chemists on the staff of the United States Testing Co. in planning the test procedure.

Verner Smitham Dies

Verner R. Smitham, Oliver Goldsmith Exterminating Co., Dallas, and a member of the National Pest Control Association, died recently in Dallas.

N. S. D. A. Meets in NY

National Sprayer & Duster Association, Chicago, held its quarterly meeting in New York recently, at which time sprayer research was discussed. The guest speaker, J. Dewey Long, Special Assistant in the Division of Agricultural Engineering, Agricultural Research Administration, Beltsville, Md., who has discussed current problems with manufacturers, talked on facilities available for research as a result of the rapid introduction of many new pesticides and methods of control.

1951-52 Official Test Insecticide

SUPPLIES of the new 1951-52 Official Test Insecticide will be available from the office of the Chemical Specialties Manufacturers Association, 110 East 42nd St., New York 17, N. Y. on and after December 15, 1950, according to an announcement by H. W. Hamilton, secretary. The new 1951-52 O.T.I. is for testing of liquid insect sprays by the Peet-Grady Method according to the official procedure of CSMA. Full instructions for use are included with each carton. Cost is $6.00 per dozen to CSMA members, plus a one-dollar per dozen service charge to non-members, postage charges added. The new 1951-52 O.T.I. is for official use on and after January 1, 1951. Orders should be sent directly to the CSMA office, 110 E. 42nd Street, New York 17, N. Y.

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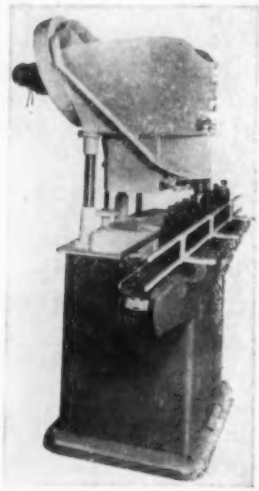

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Diversey Opens Plant

Diversey Corp., Ltd., Toronto, manufacturers of sanitation chemicals, has opened recently a new head office at its plant at Port Credit, Ontario. The headquarters of the administrative and sales organization of the company were formerly located at Toronto.

The firm maintains a laboratory for research in the new plant at Port Credit, which is located on a 12 acre plot, contains 20,000 square feet of floor space and is one story high. The company has offices located in Montreal, Winnipeg and Vancouver, and warehouses in 12 of the largest cities of Canada.

New Pennsalt Chi. Office

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced the removal of their district sales office in Chicago to Suite 1216, Builders Building, 228 North LaSalle Street. The office was formerly located at 20 North Wacker Drive.

The new office is under the direction of George D. Grogan, district sales manager for the special chemicals department.

BIMS Dinner Jan. 25

The annual dinner of the BIMS of New York will be held Thursday night, Jan. 25, at the New York Athletic Club, it was announced recently by Peter J. Forsman, executive chairman.

Chem. Ind. Medal to Rand

William M. Rand, president of Monsanto Chemical Co., St. Louis, and chairman of the board of the Manufacturing Chemists' Association, became the seventeenth recipient of the annual Chemical Industry Medal of the American Section of the Society of Chemical Industry, at a dinner at the Waldorf-Astoria Hotel, New York, Nov. 3. In accepting the medal before 400 leaders of the chemical industry, Mr. Rand pointed out that the chemical industry's growth in the past half century imposes upon it an expanding obligation of leadership in identifying itself with the public interest and public service. He further called on the industry to assume its share of the burden of leadership in public affairs and to go beyond the mere "telling of the chemical story"

WILLIAM M. RAND

to the public, which he characterized as "only a fraction of the assignment" that the industry must fulfill if it is to perform its full service to the public.

Other speakers included Williams Haynes, author and lecturer of Stoningham, Conn., who reviewed the life and achievements of the medalist, and Arthur J. Weith of the Bakelite Division of Carbide & Carbon Chemicals Corp., immediate past president of the Society's American Section, who presented the medal to Mr. Rand. Gustavus J. Esselen, chairman of the American Section and vice-president of U. S. Testing Co., Hoboken, N. J., presided.

The Chemical Industry Medal, established in 1933, is awarded annually by the American Section of the Society of Chemical Industry in recognition of conspicuous services to applied chemistry.

P. R. Termite Bulletin

The University of Puerto Rico Agricultural Experiment Station, Rio Piedras, has issued bulletin No. 85, by George N. Wolcott, which describes the termite resistance of woods. It discusses insect preference for some woods and dislike of other woods, as shown by the West Indian dry-wood termite. This theory is used as a basis for the selection of wood to be used in tropical climates.

Silicone Film Remover

Martin-Senour Co., New York, has announced a new product that will remove silicone film left by automobile polishes. Don A. Seeley, manager of the automobile division of the company, said that silicone automobile finishes must be removed before a car is refinished. The product, "Silicone Film Remover No. 6384" sells for $2.25 a gallon and 80 cents a quart.

Honor Diels, Alder

Professors Otto Diels and Kurt Alder, 1950 Nobel chemistry prize winners, have had two insecticidal products named after them. Dieldrin and aldrin, manufactured by Julius Hyman & Co., Denver, are named for the professors who discovered the diene synthesis in 1928, and several steps in the reaction between two specific classes of chemical compounds are used in the manufacture of dieldrin and aldrin.

Food Chemicals Hearings

A resumption of hearings by the Delaney subcommittee of the House investigating the use of chemicals in food has been tentatively scheduled for Nov. 28. Representatives of the National Agricultural Chemicals Association were to appear as the first witnesses. Representatives of Manufacturing Chemists Association and similar groups were also expected to testify.

Kesling Joins Isco

D. S. Cushman, vice president in charge of sales, Innis, Speiden & Co., New York, announced recently that J. P. Kesling has joined the company as a member of its technical sales and service staffs. Mr. Kesling was graduated from Case School of Applied Science, Cleveland, as a chemical engineer. He was connected previously with the technical service department of the Diversey Corp., Chicago. Later, he opened and managed the Baltimore office for Dicalite Corp., New York, before he was transferred to its New York office for technical sales work. For the past five years, he was on the technical sales staff of the Dicalite Corp.

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San. Chems. at Hotel Show

NEW products of interest to the chemical specialties and janitor supply fields were among those shown by the 500 exhibitors at the 35th National Hotel Exposition, held at Grand Central Palace, New York, Nov. 6-10. Under the direction of Robert K. Christenberry, general chairman, and Arthur L. Lee, general manager of the exposition, the five-day show admitted approximately 130,419 hotel managers, purchasing agents, dietitians, interior decorators, architects and contractors and others.

Joseph Young, vice-president of Camp Chemical Co., Brooklyn, announced at the show a new product his company is introducing under the name "Sanicamp Deodorant." Available in amounts ranging from one to 55 gallons, the general mixture contains one part of the deodorant to 50 parts of water. "Sanicamp" is recommended for use in garbage rooms, disposal areas for garbage, cess pools and septic tanks. It is germicidal and has deodorizing properties.

J. E. Bates, assistant to the president, Finnell System, Inc., Elkhart, Ind., described another new product not yet available. "Safety Base," a new product for asphalt tile and wooden floors, which gives a non-slip quality to water emulsion wax when used over the base.

A feature of the exhibit of Ponsell Floor Machine Co., New York, was a revolving platform that demonstrated every piece of equipment made by the firm. The display was designed by the president, Robert A. Ponsell, who in conjunction with J. W. Spencer, sales manager, was in charge of the exhibit. Also demonstrated was a robot, designed by Mr. Ponsell, consisting of a vacuum cleaner that operated up and down, lifting and lowering a piece of wood weighing 14 pounds. The firm's silent vacuum cleaner was shown in a new design.

H. A. Rightmire, Wyandotte Chemicals Corp., Wyandotte, Mich., headed his company's exhibit of waxes and detergents. Two new products were on exhibit for the first time—"Kromet," a combined detergent-sanitizer containing chlorine, for use in hand dishwashing and "Dural" H for use in cleaning laboratory glassware.

Another product in the dishwashing field demonstrated for the first time was that of Economics Laboratory, St. Paul, Minn. Their New York sales manager, Jerry Conners, described "Silva-Dry," a product that does away with the need for toweling silver. The material causes tableware to dry spotlessly in a few minutes. "Silva-Dry" is used in a dip tank in which the silver, placed on end in a rack, is immersed.

Mr. Conners also stated that a new product, "Satinite," which was not exhibited, had been developed in conjunction with the Aluminum Corporation of America. This product prevents the smooth finish of aluminum from becoming pitted by the action of detergents when passed through a mechanical dishwasher.

Among the exhibitors presenting their familiar lines of products were Procter & Gamble, Cincinnati, Armour & Co., Chicago, Colgate-Palmolive-Peet Co., Jersey City, N. J., John T. Stanley Co., New York, White Mop Wringer Co., Fultonville, N. Y., Long Island Soap Co., Brooklyn, and Lever Brothers Co., New York.

F. A. Keating, of Procter & Gamble, discussed his company's new hotel plan. The "Unique Guest Soap Plan" consists of a combination of "Camay" soap for hands and face and "Ivory" soap for the bath to be furnished as a unit in hotel rooms.

NPCA Elects Regional VPs

In addition to the election of J. Edwin Sameth, Western Exterminating Co., Newark, as president of the National Pest Control Association at its annual meeting in Cincinnati recently, the following regional vice presidents were elected: Region one, Charles W. Houghton, Safety Fumigant Co., Boston; region two, John K. Medoff, Hudson Exterminating Co., West New York, N. J.; region three, Martin T. Meyer, Theodore Meyer Est., Philadelphia; region four, Herman L. Fellton, Orkin Exterminating Co., Atlanta; region five, Walter B. Hill, Hill Termite Control Systems, Memphis; region six, Arden W. Price, W. B. McCloud & Co., Chicago; region seven, H. B. Ives, Rose Exterminator Co., Detroit; region eight, William O'Reilly, Plunkett Exterminating Co., Minneapolis; region nine, Maurice Oser, Oser Exterminating Co., Denver; region ten, C. A. Trimbos, Protex Service, Dallas; region eleven, J. Wilfred Gunn, Hollywood Termite Control, Los Angeles; region twelve, George Atchison, Ardie Maintainance Co., Tacoma; and region thirteen, Jack Rudick, Western Exterminating Co., Montreal.

Carbon Tet. Control

Some form of priority and allocation regulations on carbon tetrachloride may be requested by the U. S. Department of Agriculture for fumigating Government and private owned stored grains, it was learned recently. Officials of the U.S.D.A. are reported concerned over the shortage of carbon tetrachloride, particularly in view of the wet growing season which created ideal conditions for grain insects.

Thompson on Warfarin

Friar Thompson, manager of the insecticide department of Prentiss Drug & Chemical Co., New York, will present a paper entitled "Progress Report on Warfarin" at the midyear meeting of the scientific section of the Proprietary Assn., being held Dec. 7, at the Hotel Biltmore, New York.

Doan in Dow Sales Post

R. L. Curtis, vice president, Dow Chemical Co., Midland, Mich., and general manager of its Great Western Division hsa announced recently the appointment of Leland A. Doan as Western Sales manager. Mr. Doan succeeds J. F. Smith who has asked to be relieved of his responsibilities after 22 years' as sales manager. He is now doing other administrative duties.

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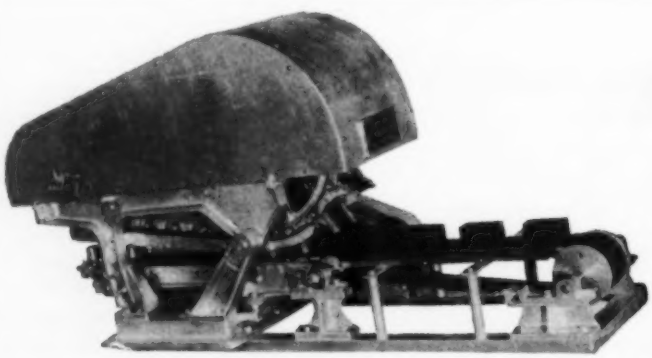

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Expand Chlorophyll Plant

American Chlorophyll, Inc., Lake Worth, Fla., recently announced that it has tripled its plant capacity within the past three months. It was stated that this expansion was due to the increased demand for chlorophyll as a result of new discoveries for uses in commercial deodorants and for pharmaceuticals.

Hyman Dieldrin Booklet

Julius Hyman & Co., Denver, have announced the availability of a booklet containing general information on experimental uses of dieldrin. This booklet, circular 500, is entitled "Dieldrin for Agricultural and Public Health Insect Control".

DCAT 25th Dinner Mar. 8

The 25th annual dinner of the Drug, Chemical and Allied Trades Section of the New York Board of Trade is scheduled to be held, Thursday, March 8, 1951, at the Waldorf-Astoria Hotel, New York. Special features, as yet unannounced, will mark the Silver Anniversary of the dinner.

AAEE Meets in Denver Dec. 18-21

The American Association of Economic Entomologists will meet jointly with the Entomological Society of American in Denver, Colo., Dec. 18-21. Headquarters for the A.A.E.E. will be the Cosmopolitan Hotel, while the E.S.A. will headquarter at the Shirley-Savoy. The question of consolidation of the two organizations is to be discussed at the meeting.

Dearing In Koppers Post

Dr. William C. Dearing, former director of research for the Plaskon Division of Libby-Owens-Ford Co., Toledo, recently joined the research department of Koppers Co., Pittsburgh. He has been named assistant manager of the Koppers research department laboratory section.

Pennsalt Advances Murphy

Francis E. Murphy has been appointed production supervisor of the Wyandotte works of the Pennsylvania Salt Manufacturing Co., Philadelphia, it was announced recently by William F. Mitchell, vice president in charge of manufacturing.

MGK Head Comments on Pyrethrum Article

A number of critical comments on the article "What's Ahead for Pyrethrum," appearing in the October issue of *Soap and Sanitary Chemicals* were contained in a recent letter from George McLaughlin, president of McLaughlin, Gormley, King Co., Minneapolis. With respect to the statement that allethrin had little effect on roaches, and that its use with synergists was limited, Mr. McLaughlin points out that extensive test work on allethrin, both by commercial and independent laboratories, and by the Federal and State experiment station workers, indicates that allethrin will replace pyrethrins, pound for pound, when properly formulated with a suitable synergist and stabilizer.

"When combined with MGK '264' it (allethrin) is fully effective on roaches at economical levels. It can also be used 45/55 with pyrethrins plus '264' very satisfactorily on roaches, and that is the way we are recommending it now. Blending saves a lot of pyrethrum, and dollars too, and provides higher quality than any sprays we know of which are toxicologically safe. It is true that piperonyl butoxide, sesame and n-propyl isome do not work as well with allethrin as they do with pyrethrins, but MGK '264' works fine with both active principles."

Mr. McLaughlin considers allethrin to be directly competitive with the natural product. "Many manufacturers are planning to use allethrin either in whole or in part to replace pyrethrins in 1951," he reports.

"We believe that both pyrethrins and allethrin will find a place for many years to come as the best toxicants for household and industrial sprays and aerosols, which are toxicologically safe, and which will replace the polychlorides, which are not only less safe but also become ineffective as successive generations build up resistance."

Ralph W. Stone Dies

Ralph W. Stone, 66, proprietor of Universal Exterminators Service, Chicago, died Nov. 1. Mr. Stone had been prominent in Chicago pest control activities for years and was widely known as founder of the Junior Rangers of America. He left no survivors.

Named to Solvay Posts

E. C. Drew and H. J. Forth recently were named purchasing agent and assistant to the purchasing agent, respectively, of the alkali section of Solvay Process Division, Allied Chemical & Dye Corp., New York.

Croda Opens US Branch

Croda Limited, Croda House, Snaith, Goole, Yorks, England, has announced recently the establishment of a company in the United States to be known as Croda Inc., with headquarters at 26th Street and Madison Ave., New York. A plant will be set up for the manufacture of their Hartolan wool wax alcohols.

F. A. S. Wood, a director of Croda, Ltd., arrived in the United States recently to set up the new company, which will supply Croda products.

Aromatics Course Speakers

Dr. Oliver L. Marton, chief chemist for Shulton, Inc., New York, discussed "Cosmetics and Perfume Materials" at the Nov. 13 session of the course on Aromatics being given at New York University by Samuel Klein, of the New York firm of that name. Herbert Sommer, perfumer of Prince Matchabelli, Inc., New York, and Dr. Kurt Kulka, research chemist of Dodge & Olcott, Inc., New York, were also scheduled to speak at subsequent lectures.

Pack. Exposition Dates

The American Management Association, New York, recently announced that it would sponsor its 20th National Packaging Exposition April 17-20 at the auditorium in Atlantic City. Arrangements for the Exposition are under the direction of Clapp & Poliak, New York.

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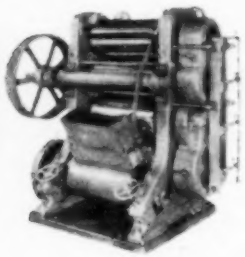

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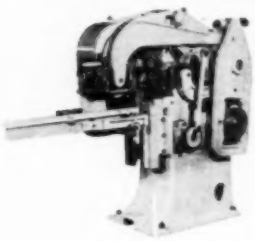

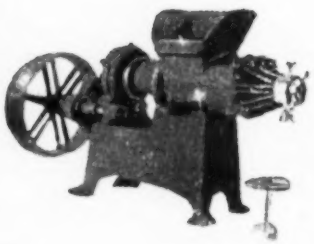

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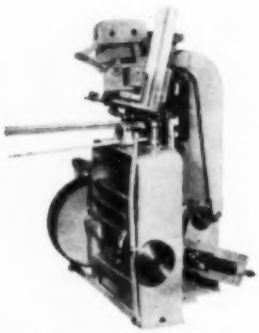

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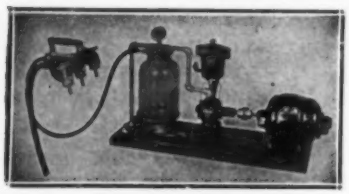

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For Sale: Complete soap or sanitary chemical plants. Also individual items such as crutchers, plodders, mills, mixers, pressers, dryers, filling equipment, etc. R. Gelb & Sons, Inc., State Highway No. 29, Union, N. J.

For Sale: Two 200 gallon full jacketed Dopp Kettles with type "L" agitator. Also other chemical equipment. Allied Steel & Equipment Co., Dept. W., Chester, New Jersey.

For Sale: New 65 gallon Pfaudler glass lined Jack. Kettles. Mikro pulverizers #1SH, 3HP. Other sizes. Allbright-Nell 4'x9' chilling rolls. Lehmann 4 roll W.C. 12"x36" steel mill. Houchin 8½"x16" 3 roll & 18"x30" 4 roll Granite Stone Mills. Anderson No. 1 and Duo Expellers. Jack, kettles & tanks, iron, copper, alum., stainless Dryers vac & atmos. Jones automatic soap presses. Soap frames. Automatic soap chip dryer. Slabbers & cutting tables hand & Power. Crutchers. Blanchard #14 soap powder mill. 6 knife chipper. Foot presses. Filter presses 12" to 42" Wrapping & sealing machines. Powder, paste & liquid mixers. Rotex sifters. Filling machines. Grinders. Hammer mills. Mikro pulverizers. Colloid mills. Three roll steel mills, 3"x9", 9"x32", 12"x30", & 16"x40". Portable elec. agitators, pumps, etc. Send for bulletin. We buy your surplus equipment. Stein Equipment Co., 90 West St., N. Y. 6, N. Y. WOrth 2-5745.

For Sale: J. H. Day, double arm sigma blade mixer 24"x24"x18" deep, tilting discharge. Plant Equipment Co., Cincinnati 3, Ohio.

For Sale: 1—Proctor & Schwartz 5-section soap chip dryer, with 4' dia. cooling roll; 1—Pkge. Mach. Co. N4 laundry & toilet bar wrapping machine; 1—Houchin hand soap slabber; 1 — Houchin 4-roll inclined Granite Mill, 18"x30" rolls, pulley drive; 2—Houchin 3" soap strainers; 50-1200 lb. soap frames; 2—Sperry 36"x36" recessed filter presses 60 plates; 2—Dopp cast iron 600 and 350 gallon jacketed kettles; 1—AllbrightNell 4'x9' chilling roll; 1—Blanchard #10 soap powder mill. Only a partial list. Send us your inquiries. Consolidated Products Co., 15-21 Park Row, New York 7, N. Y. Phone: BArclay 7-0600.

Maintenance Show Dates

Maintaining standards of sanitation and maintenance in chemical plants are among the topics to be discussed during the Plant Maintenance Show, being held in Cleveland, O., Monday, Tuesday and Wednesday, Jan. 15-17. In addition to discussion sessions on various phases of maintenance, exhibits of maintenance products and equipment will be staged in the Cleveland Auditorium. Manufacturers of cleaners and other chemical specialties and equipment already scheduled to exhibit their products include: Breuer Electric Manufacturing Co., Chicago; Doyle-Vacuum Cleaner Co., Muskegon, Mich.; Finnel Systems, Inc., Elkhart, Ind.; Hercules Powder Co., Wilmington; Huntington Laboratories, Inc., Huntinghon, Ind.; S. C. Johnson & Son, Inc., Racine, Wisc.; Kent Co., Rome, N. Y.; Koppers Co., Pittsburgh; Multi-Clean Products Co., St. Paul, Minn.; Oakite Products, Inc., New York; Rohm & Haas Co., Philadelphia; Sugar Beet Products Co., Saginaw, Mich.; West Disinfecting Co., Long Island City, N. Y.

Owens-Ill. Shifts Thomas

Appointment of Claude W. Thomas, Jr., as Eastern regional merchandising manager of the glass container division of Owens-Illinois Glass Co., Toledo, was announced recently. He is making his headquarters in the company's New York office.

Johnson Wax Tower

(*From Page* 141)

with semi-circular notches provide internal support for the tubes, held in place by stainless steel wire.

This arrangement of tubing admits diffused light to all working areas, and the effect created throughout is one of lightness and airiness not found commonly in modern business buildings.

In addition to the research and development buildings, the visitors also saw new quarters for the company's advertising department, a fully equipped photographic laboratory and studio, and a lounge, dining area, and service quarters, known as "The Causerie," which will also serve the practical purpose of providing visual demonstration of the uses of the company's household products. On one wall of the foyer is a mural painted by the Chinese artist, Wang Chi-Yuan. It depicts a Carnauba palm scene in Brazil.

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Detergent Survey

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Magnus in Defense Post

Percy C. Magnus, president of Magnus, Mabee & Reynard, Inc., New York, was recently appointed to serve on the Advisory Council to the Director of Civil Defense, City of New York. He is serving under Arthur W. Wallander, former chief of police of New York.

Article on Mildew-Proofing

The problem of mildew and what to do about it are discussed in an article, "Stop that Rot," which appears in the fall issue of "Monsanto Magazine," published by Monsanto Chemical Co., St. Louis. The article discusses the company's mildew-proofer, "Milmer 1," and its use in new formulas to combat rot.

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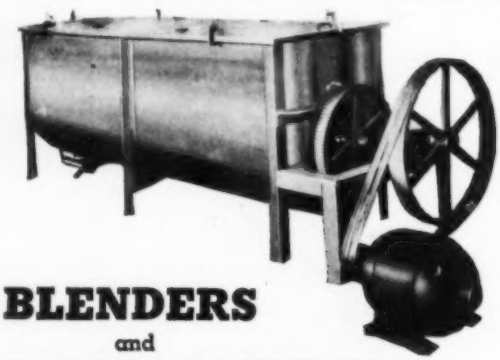

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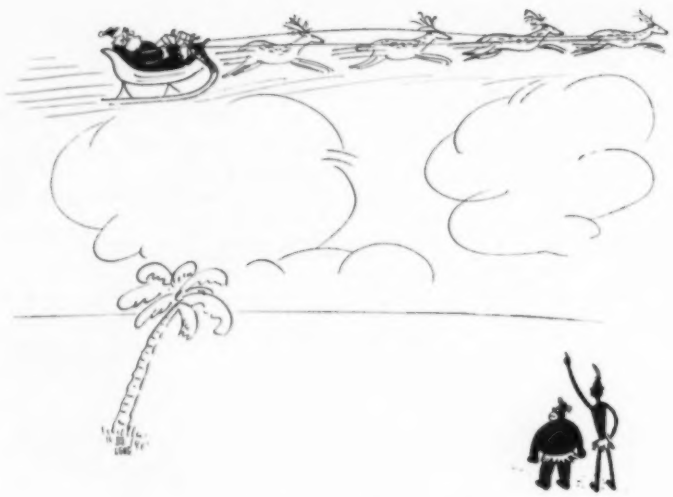

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FIVE out of the world's six largest users of premiums and merchandise coupons during the past year were soap and cleanser manufacturers. The other one was General Foods. Where the grocer has to act as redeeming agent for these, his deep and abiding love for soap manufacturers as a class may be in part understandable.

* * *

What well-known Cincinnati industrial soaper recently bought 800,000 pounds of a bankrupt stock of the detergent, "Sing," in 2-lb. packages? And, then, proceeded to open every one of the 400,000 packages and dump the stuff out for dry mixing into a bulk detergent? And who did this laborious job because he couldn't get alkalies any other way and he had orders to fill? For the first correct guess of the name of this bombastic genius, gentle reader, we will give absolutely free, one gold plated toothpick.

* * *

Said Charles E. Higgins, president of the Hercules Powder Co., at a recent conference of chemical editors held in Wilmington, Del.: "If all statisticians were laid end to end, it would be a good thing."

* * *

Unique name of a new company to make and sell waxes and polishes, recently incorporated by Edward Margolin in New York, is "Saint of Sloan Street, Inc." This name differs notably from the designations which we have heard users apply to some of the polishes supplied them upon occasion in the past by others.

* * *

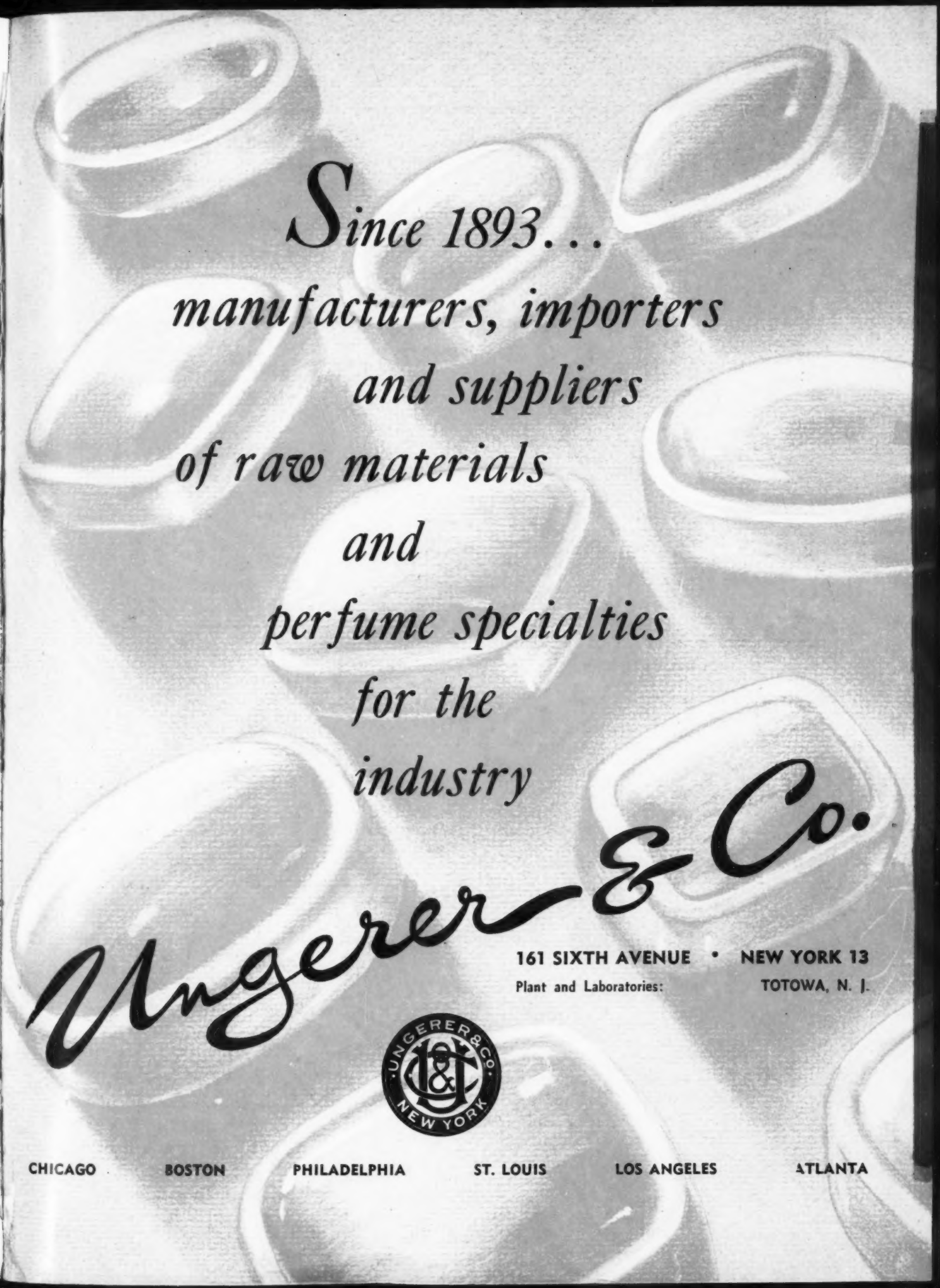
No more moth holes in G I Joe's winter uniforms! The Army announces that hereafter wool uniforms will be "DDTreated"—ain't that DDTreated too cute for words?—and insect damage will be cut by $75,000 per year. If they do a good job, we'll gamble the saving could be ten times this amount!

* * *

To chase away starlings, Toronto city officials plan to spray trees in which the starlings colonize with a mixture of soft soap and "coal oil." This should be, indeed, effective. Soon, there will be no more trees in which the starlings can roost, so they will take their departure.

* * *

As a truckman accidentally dropped a small drum of concentrated liquid soap, it burst and the contents spread over the sidewalk. As we watched, a mail carrier intent upon the swift completion of his appointed rounds stepped into the mess, his feet went skyward and he made a hard but fast one-point landing, his bag of mail being well scattered in the soapy morass. All of which made us wonder at the time if there aren't more important uses for liquid soap other than just washing hands and shampooing hair. We suggest that the new Director of Guided Missiles, U. S. Dept. of Defense, look into the matter.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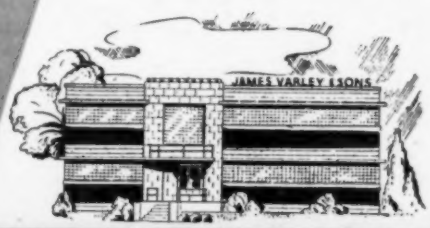

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